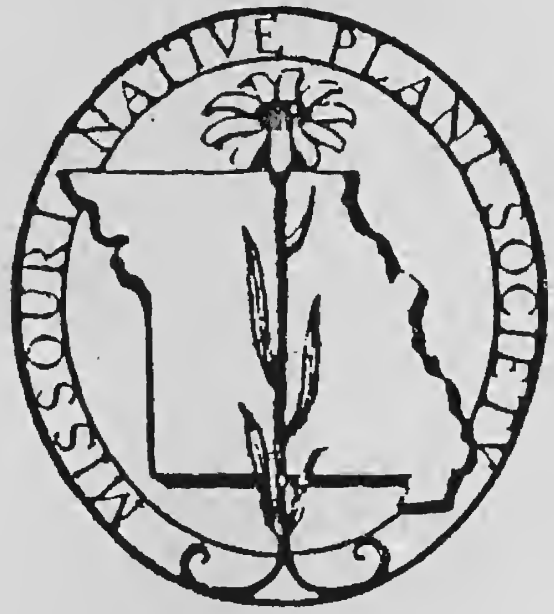
Volume 9 1988 Number 2

MISSOURIENSIS



JOURNAL OF THE
MISSOURI NATIVE PLANT SOCIETY

Published for the Society
At
Southwest Missouri State University, Springfield

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Missouriensis is the official publication of the Missouri Native Plant Society. Founded in 1979 as a non-profit corporation, the Society is devoted to the conservation and study of the plants growing wild in Missouri, to the education of the public about the significance of the native flora and its habitat, and to the publication of related information.

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VEGETATION OF KNOB NOSTER STATE PARK II. SPECIES LIST

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Introduction

This is the second report on the vegetation of Knob Noster State Park, Johnson County, Missouri. Mullikin and Castaner (1987) previously reported on the physiognomic communities of Knob Noster State Park. The park is principally composed of wooded uplands, ecologically dominated by post oak and shagbark hickory, with black oak, red oak, slippery elm, and mockernut; and wooded lowlands, dominated by American elm, slippery elm, bitternut, honey locust, black locust, and swamp white oak. In addition, open fields and shores of lakes, ponds and streams, provide diverse habitats for non-woodland species.

Methods

Extensive collections were made by the senior author and others during a continuous 19-year period from 1969 to 1988. Most specimens were collected in the two years from 1972 to 1973 by Ron Mullikin (1977) as part of a Master of Science degree program at Central Missouri State University. All specimens collected by Mullikin have been reviewed. Names have been verified or changed where necessary. All voucher specimens have been placed in the herbarium of Central Missouri State University [WARM].

Results

Five-hundred-and-seventeen (517) species (including one putative hybrid) were identified. In addition, twenty-three species in the above total were represented by two varieties or forms, while two species were represented by three varieties or forms, making a total of 544 taxa found in the park.

The families represented by the most taxa were the Asteraceae (66) followed by

the Poaceae (57), the Cyperaceae (35), the Fabaceae (32) and the Rosaceae (23) (Table 1). The sequence of abundance of species per family is very similar to that reported for Missouri by Steyermark (1963). In his report, members of the Asteraceae (Compositae) were most common with 230 species, followed by the Poaceae (Gramineae) with 186 species, the Cyperaceae (183), and the Rosaceae (105). The number of taxa from each family is given in parentheses after each family name in the List of Species.

Table 1. The fifteen most common families by taxa count in Knob Noster State Park, Johnson County, Missouri

FAMILY	NO. OF TAXA REPRESENTED
Asteraceae - Composite family	66
Poaceae - Grass family	57
Cyperaceae - Sedge family	35
Fabaceae - Legume family	32
Rosaceae - Rosae family	23
Apiaceae - Parsley family	17
Liliaceae - Lily family	16
Fagaceae - Beech family	15
Brassicaceae - Crucifer family	14
Scrophulariaceae - Figwort family	14
Lamiaceae - Mint family	14
Polygonaceae - Buckwheat family	12
Ranunculaceae - Buttercup family	10
Caryophyllaceae - Pink family	9
Violaceae - Violet family	9

As found by Steyermark (1963) for Missouri, the genus most represented by species in the park was *Carex* (Cyperaceae) with 26 taxa. He listed 135 taxa in the genus *Carex* for Missouri. The next largest genera in the park were *Quercus* (Fagaceae) with 15 taxa, including 1 putative hybrid, and *Viola* (Violaceae) with 9 taxa. Other important genera were *Asclepias, Polygonum,* and *Aster* (Table 2).

For easy reference and comparison, the following List of Species is arranged according to pages in *Flora of Missouri* (Steyermark 1963). Where the authors preferred a different scientific name a reference is given. References labelled [GP] are for *Flora of the Great Plains* (Great Plains Flora Association 1986). Taxa not reported for the county by either Steyermark in the *Flora of Missouri,* or Henderson (1980) are indicated by an asterisk (*).

Table 2. The twelve most common genera by taxa count in Knob Noster State Park, Johnson County, Missouri.

GENUS	NO. OF TAXA REPRESENTED
Carex - sedges	26
Quercus - oaks	15
Viola - violets	9
Asclepias - milkweeds	8
Polygonum - smartweed	8
Aster - asters	7
Dicanthelium - panic grasses	5
Carya - hickories	5
Trifolium - clovers	5
Verbena - vervains	5
Plantago - plantains	5
Galium - bedstraws	5

LIST OF VOUCHER SPECIMENS OF TAXA COLLECTED FROM KNOB NOSTER STATE PRK FROM 1969 TO 1988

CONIFERS, FERNS, AND FERN ALLIES

OPHIOGLOSSACEAE (1)

15 *Botrychium virginianum* (L.) Sw. var. *virginianum* -Rattlesnake Fern - *Mullikin 704, Legg 95*

POLYPODIACEAE (6)

22 *Adiantum pedatum* L. var. *pedatum* - Maidenhair Fern - *Castaner 4163*
27 *Onoclea sensibilis* L. - Sensitive Fern -*Mullikin 779*
31 *Asplenium platyneuron* (L.) Oakes - Ebony Spleenwort - *Oskins 166*
36 *Woodsia obtusa* (Spreng.) Torr. - Woodsia - *Lewis 79*
36 *Cystopteris protrusa* (Weath.) Blasdell [GP57] = *C. fragilis* (L.) Bernh. var. *protusa* Weath. - Fragile Fern - *Castaner 4162*
41 *Polystichum acrostichoides* (Michx.) Schott f. *acrostichoides* - Christmas Fern - *Mullikin 370*

PINACEAE (1)

42 *Pinus echinata* Mill.* - Shortleaf Pine - *Mullikin 354*

CUPRESSACEAE (1)

45 *Juniperus virginiana* L. var. *virginiana* - Eastern Red Cedar - *Mullikin 355*

ANGIOSPERMS

MONOCOTYLEDONS

TYPHACEAE (1)

46 *Typha latifolia* L. f. *latifolia* - Common Cattail - *Mullikin 82*

NAJADACEAE (1)

55 *Potamogeton nodosus* Poir. - Pondweed - *Meck 43*

ALISMATACEAE (3)

58 *Alisma plantago-aquatica* L. var. *parviflorum* (Pursh.) Torr.* - Water Plantain - *Mullikin 783, Oskin 383*
62 *Sagittaria calycina* Englem.* [GP 1026] = *S. montevidensis* Cham. & Schl. subsp. *calycina* (Engelm.) Bogin - Arrowhead - *Meck 42*
64 *S. brevirostra* Mack. & Bush* [GP 1026] = *S. engelmanniana* J. G. Sm. subsp. *brevirostra* (Mack. & Bush) Bogin - Arrowhead - *Mullikin 888, Castaner 4404*

POACEAE (57)

84 *Bromus pubescens* Wild. [GP 1146] = *B. purgans* L. - Hairy Brome - *Castaner 486, 9540*
84 *B. inermis* Leyss - Smooth Brome - *Mullikin 619*
86 *B. japonicus* Thunb. - Japanese Brome - *Mullikin 1071*
88 *B. tectorum* L. var. *tectorum* - Downy Chess - *Mullikin 1067*
92 *Festuca pratensis* Huds. [GP1181] = *F. elatior* L. - Fescue *Mullikin 576, 943*
96 *Glyceria striata* (Lam.) Hitchc. - Fowl Meadow Grass - *Mullikin 637*
98 *Poa chapmaniana* Scribn. - Chapman Blue Grass - *Mullikin 244*
100 *P. compressa* L. - Canada Blue Grass - *Oskins 204*
100 *P. pratensis* L. - Kentucky Blue Grass - *Mullikin 225*
102 *P. wolfii* Scribn.* - *Castaner 2772*
106 *Eragrostis hypnoides* (Lam.) BSP.* - Creeping Love Grass *Mullikin 911*
107 *E. frankii* C. A. Meyer var. *frankii* - Love Grass - *Priesendorf 1100*
108 *E. cilianensis* (All.) E. Mosher - Stink Grass - *Mullikin 988*
113 *Diarrhena americana* Beauv. var. *obovata* Gleason - *Mullikin 1036, Castaner 10149*
115 *Chasmanthium latifolium* (Michx.) Yates [GP1152] = *Uniola latifolia* Michx.- Spike Grass - *Castaner 308, Mullikin 835*
115 *Dactylis glomerata* L. - Orchard Grass - *Mullikin 389*
120 *Tridens flavus* (L.) Hitchc. f. *cupreus* (Jacq.) Fosb. - Purpletop - *Mullikin 1024*

130 *Elymus virginicus* L. var. *jejunus* (Ramaley) Bush* - Wild Rye - *Mullikin 570*
131 *E. virginicus* L. var. *glabriflorus* (Vasey) Bush f. *australis* (Scribn. & Ball) Fern.* - Wild Rye - *Mullikin 753*
132 *Hystrix patula* Moench* - Bottlebrush Grass - *Castaner 4518*
133 *Hordeum jubatum* L. var. *jubatum* - Squirreltail - *Mullikin 565*
133 *H. pusillum* Nutt. - Little Barley - *Mullikin 575*
146 *Agrostis alba* L.* - Red Rop - *Mullikin 568*
148 *A. perennans* (Walt.) Tuckerm. - Upland Bent - *Castaner 10185*
150 *Cinna arundinacea* L. var. *inexpansa* Fern. & Grisc. - Wood Reed Grass - *Mullikin 854, Castaner 4252*
153 *Phleum pratense* L. var. *pratense* f. *pratense** - Timothy - *Mullikin 585*
154 *Muhlenbergia cuspidata* (Torr.) Muhl.* - Plains Muhly - *Mullikin 368*
155 *M. racemosa* (Michx.) BSP.* - Muhly - *Mullikin 1037*
156 *M. frondosa* (Poir.) Fern. - Nimble Will - *Mullikin 980*
158 *M. mexicana* (L.) Trin. f. *mexicana** - Muhly -*Castaner 10158*
177 *Eleusine indica* (L.) Gaertn. - Goose Grass - *Mullikin 994*
182 *Bouteloua curtipendula* (Michx.) Torr. Sideoats Gramma - *Priesendorf 1116*
188 *Phalaris arundinacea* L.* - Reed Canary Grass - *Mullikin 578*
192 *Leersia lenticularis* Michx.* - Catchfly Grass - *Mullikin 905*
192 *L. virginica* Willd. - White Grass - *Mullikin 950, Castaner 4251*
194 *Digitaria sanguinalis* (L.) Scop. - Crab Grass - *Mullikin 882, Castaner 4254*
194 *D. ischaemum* (Schreb.) Muhl. var. *ischaemum* - Crab Grass - *Mullikin 926*
201 *Paspalum setaceum* Michx. [GP1206] = *Panicum ciliatifolium* Michx. var. *muhlenbergii* (Nash) Fern. - Paspalum - *Mullikin 1013*
212 *Dicanthelium linearifolium* (Scribn.) Gould. [GP 1159] = *Panicum linearifolium* Scribn. var. *linearifolium* - Panic Grass - *Mullikin 404*
216 *D. acuminatum* (Sw.) Gould & Clark var. *acuminatum* [GP 1158] = *Panicum lanuginosum* Ell. var. *fasciculatum* (Torr.) Fern. - Panic Grass - *Mullikin 501*
216 *D. acuminatum* (Sw.) Gould & Clark var. *implicatum* (Scribn.) Gould & Clark* [GP1158] = *Panicum lanuginosum* Ell. var. *implicatum* (Scribn.) Fern. - Panic Grass - *Mullikin 1084*
222 *D. clandestinum* (L.) Gould [GP 1158] = *Panicum clandestinum* L. - Panic Grass - *Mullikin 540*
222 *D. latifolium* (L.) Gould [GP 1159] = *Panicum latifolium* L. - Panic Grass - *Mullikin 496*
225 *Panicum dichotomiflorum* Michx. - Panic Grass - *Mullikin 997*
233 *Echinochloa crusgalli* (L.) Beauv. var. *crusgalli* f. *crusgalli* - Barnyard Grass - *Mullikin 840, 948*
234 *E. crusgalli* (L.) Beauv. var. *crusgalli* f. *longiseta* (Trin.) Farw.* - Barnyard Grass - *Mullikin 851*
234 *E. muricata* (Beauv.) Fern. var. *muricata* - Barnyard Grass - *Mullikin 986, 998*
236 *E. muricata* (Beauv.) Fern. var. *microstachya* Wieg.* - Barnyard Grass - *Mullikin 883*
237 *Setaria glauca* (L.) Beauv. - Yellow Foxtail - *Priesendorf s.n.*
238 *S. viridis* (L.) Beauv. var. *viridis* - Green Foxtail - *Mullikin 620*
238 *S. faberii* Herm. - Nodding Foxtail - *Mullikin 876*
243 *Andropogon scoparius* Michx. - Little Bluestem - *Priesendorf 1117*

246 *A. gerardii* Vitman var. *gerardii* - Big Bluestem - *Mullikin 928, Castaner 10141*
247 *A. virginicus* L.* - Broom Sedge - *Castaner 10150*
248 *Sorghum halepense* (L) Pers. - Johnson Grass - *Weimer s.n.*
252 *Sorgastrum nutans* (L.) Nash - Indian Grass - *Priesendorf 1113*
254 *Tripsacum dactyloides* L. - Gama Grass - *Priesendorf 1103*

CYPERACEAE (35)

262 *Cyperus erythrorhizos* Muhl.* - *Mullikin 1015*
264 *C. esculentus* L. var. *esculentus* f. *esculentus* - Yellow nut grass - *Castaner 10008*
266 *C. strigosus* L. var. *strigosus** - *Castaner 10144*
266 *C. strigosus* L. var. *robustior** - *Castaner 10143*
279 *Eleocharis obtusa* (Willd.) Schultes - Spike Rush - *Castaner 10004, 10145*
279 *E. smallii* Britt.* - *Mullikin 574*
282 *E. tenuis* (Willd.) Schultes var. *verrucosa* Svenson - Spike Rush - *Mullikin 290*
296 *Scirpus georgianus* Harper* [GP 1110] = *S. atrovirens* Willd. var. *georgianus* (Harper) Fern. - *Mullikin 510*
298 *S. lineatus* Michx. - Bulrush - *Mullikin 524, Castaner 4167*
331 *Carex radiata* (Wahl.) Small [*sensu* Webber & Ball (1984)] = *Carex rosea* Willd. - *Mullikin 367, Castaner 2248*
331 *C. leavenworthii* Dew. - *Oskins 171, Mullikin 293*
332 *C. muhlenbergii* Schk. var. *enervis* Boott - *Castaner 110, 2376*
334 *C. gravida* Bailey* - *Mullikin 535*
335 *C. vulpinoidea* Michx. - Fox Sedge - *Mullikin 572*
340 *C. conjuncta* Boott* - *Mullikin 598*
340 *C. muskingumensis* Schwein.* - *Mullikin 741, Castaner 2377*
341 *C. tribuloides* Wahlenb. - *Mullikin 587, Castaner 2385*
341 *C. cristatella* Britt. - *Castaner 2380, 10002*
342 *C. normalis* Mackenz.* - *Castaner 2379*
343 *C. molesta* Mackenz. - *Mullikin 557, 624, Castaner 100, Oskins 169*
346 *C. jamesii* Schwein.* - *Castaner 2250*
347 *C. artitecta* Mackenz.* - *Castaner 2773*
350 *C. abdita* Bickn.* - *Mullikin 80, Thrutchley 154, 186, Oskins 150*
354 *C. blanda* Dew. - *Mullikin 369, Thrutchley 157, Oskins 83, 100*
355 *C. granularis* Muhl. - *Castaner 101*
356 *C. oligocarpa* Schkuhr.* - *Castaner 2771*
358 *C. amphibola* Steud. var. *turgida* Fern. - *Castaner 104*
362 *C. davisii* Schw. & Torr. - *Mullikin 595*
363 *C. complanata* Torr. & Hook. var. *hirsuta* (Bailey) Gl.* - *Mullikin 622, Castaner 106, 109, Campbell 105, 122, Campbell s.n., Oskins 168*
364 *C. bushii* Mackenz.* - *Mullikin 561, Oskins 170*
366 *C. shortiana* Dewey - *Mullikin 347, Castaner 2381*
374 *C. lacustris* Willd.* - *Atkinson 39*
378 *C. frankii* Kunth - *Mullikin 644, Castaner 102*
378 *C. squarrosa* L.* - *Mullikin 590 Castaner 169, 3751*
382 *C. lupulina* Muhl.* - Hop Sedge - *Mullikin 594, Castaner 2382, Elliott 86*

ARACEAE (2)

383 *Arisaema atrorubens* (Air.) Blume f. *zebrinum* (Sims) Fern.* - Jack-in-the-pulpit - *Mullikin 261, 279*
384 *A. dracontium* (L.) Schott - Green Dragon - *Oskins 135*

LEMNACEAE (2)

389 *Lemna minima* Karst.* - Duckweed - *Mullikin 970, Priesendorf 1094*
390 *Wolffia columbiana* Phil.* - Watermeal - *Priesendorf 1095*

COMMELINACEAE (2)

396 *Tradescantia ohiensis* Raf. - Spiderwort - *Mullikin 337*
397 *Commelina communis* L. var. *communis* - Day Flower - *Castaner 10157B, Mullikin 694*

JUNCACEAE (3)

408 *Juncus tenuis* Willd. f. *tenuis* - Path Rush - *Mullikin 621*
410 *J. interior* Wieg. - Rush - *Mullikin 571*
413 *J. acuminatus* Michx. - Knotty-leaved Rush - *Mullikin 413*

LILIACEAE (16)

424 *Uvularia grandiflora* Sm. - Bellwort - *Mullikin 146*
425 *Allium vineale* L. - Field Garlic - *Mullikin 537*
428 *A. canadense* L. - Wild Garlic - *Mullikin 463*
428 *A. mutabile* Michx. - Wild Garlic - *Mullikin 498, 499*
429 *Nothoscordum bivalve* (L.) Britton - False Garlic - *Mullikin 180*
430 *Hemerocallis fulva* L. var. *fulva** - Orange Day Lily - *Mullikin 686*
432 *Lilium michiganense* Farw. - Michigan Lily - *Mullikin 1107*
434 *Erythronium albidum* Nutt. [GP 1249] = *E. albidum* Nutt. var. *albidum* - White Dog-toothed Violet - *Mullikin 120*
434 *E. mesochoreum* Knerr [GP 1249] = *E. albidium* Nutt. var. *mesochoreum* (Knerr) Rickett - Prairie Dog-toothed Violet - *Mullikin 99, Haeffner 10*
435 *Camassia scilloides* (Raf.) Cory f. *scilloides* - Wild Hyacinth - *Mullikin 207*
438 *Ornithogalum umbellatum* L.* - Star-of-Bethlehem - *Pasley 85*
439 *Asparagus officinalis* L. - Asparagus - *Priesendorf 1097*
442 *Polygonatum biflorum* (Walt.) Ell. f. *biflorum* - Solomon's Seal - *Mullikin 476*
444 *Trillium sessile* L. f. *sessile* - Wake Robin - *Mullikin 115*
451 *Smilax herbacea* L. var. *herbacea** - Carrion Flower - *Mullikin 407*
452 *S. tamnoides* L. var. *hispida* (Muhl.) Fern. - Catbrier - *Mullikin 732*

DIOSCOREACEAE (1)

455 *Dioscorea villosa* L. - Yam - *Mullikin 650*

AMARYLLIDACEAE (2)

456 *Narcissus pseudo-narcissus* L. - Daffodil - *Mullikin 68*
457 *Hypoxis hirsuta* (L.) Coville f. *villosissima* Fern. - Yellow Star Grass - *Mullikin 302*

IRIDACEAE (2)

466 *Sisyrinchium campestre* Bickn. f. *campestre* - Prairie Blue-eyed Grass - *Mullikin 268*
466 *S. campestre* Bickn. f. *kansanum* (Bickn.) Steyermark* - White Prairie Blue-eyed Grass - *Mullikin 265*

ORCHIDACEAE (3)

474 *Habenaria flava* (L.) R. Br. var. *herbiola* (R. Br.) Ames & Correll* - Pale Green Orchid - *Shroyer 70, Oskins 365*
479 *Spiranthes tuberosa* Raf. var. *tuberosa** - Little Lady's Tresses - *Priesendorf 1109*
480 *S. cernua* (L.) Richard - Common Ladies' Tresses - *Mullikin 1033*

DICOTYLEDONS

SALICACEAE (2)

494 *Salix nigra* Marsh. - Black Willow - *Mullikin 356, 402, 700*
507 *Populus deltoides* Marsh. - Eastern Cottonwood - *Mullikin 129, 340*

JUGLANDACEAE (6)

511 *Juglans nigra* L. f. *nigra* - Black Walnut - *Priesendorf 1106*
516 *Carya cordiformis* (Wang.) K. Koch f. *latifolia* (Sarg.) Steyerm.* - Bitternut Hickory - *Mullikin 629, Castaner 3862, 4360*
517 *C. ovata* (Mill.) K. Koch - Shagbark Hickory - *Mullikin 417, Castaner 3757, 4343, 4407*
518 *C. laciniosa* (Michx.) Loud. - Big Shellbark Hickory - *Castaner 5983*
518 *C. tomentosa* Nutt. - Mockernut Hickory - *Mullikin 406, 471, Castaner 3863, 4345, 4905*
522 *C. texana* Buckl. - Black Hickory - *Castaner 4904, 4679, Priesendorf 1091*

BETULACEAE (3)

524 *Corylus americana* Walt. - American Hazelnut - *Castaner 3865*
526 *Ostrya virginiana* (Mill.) K. Koch var. *lasia* Fern. - Hop Hornbeam - *Mullikin 701, 1043*
527 *Betula nigra* L. - River Birch - *Mullikin 746*

FAGACEAE (15)

535 *Quercus alba* L. f. *alba* - White Oak - *Mullikin 314*
535 *Q. alba* L. f. *latiloba* (Sarg.) Palmer & Steyerm. - White Oak - *Mullikin 359, 626*
536 *Q. stellata* Wang. var. *stellata* - Post Oak - *Mullikin 445, 1014, Castaner 4350*
537 *Q. macrocarpa* Michx. f. *macrocarpa* - Bur Oak - *Mullikin 663*
538 *Q. bicolor* Willd. - Swamp White Oak - *Mullikin 1102, Castaner & Thompson 2461, Castaner 4344*
539 *Q. prinoides* Willd. var. *acuminata* (Michx.) Gl. - Chestnut Oak - *Mullikin 506, Castaner 4356*
539 *Q. prinoides* Willd. var. *acuminata* f. *alexanderi* (Britt.) Steyerm.* - Chestnut Oak - *Mullikin 365*
540 *Q. imbricaria* Michx. - Shingle Oak - *Mullikin 310, 1099*
543 *Q. marilandica* Muenchh. - Black Jack Oak - *Castaner 4682*
544 *Q. velutina* Lam. f. *velutina* - Black Oak - *Castaner 2655*
545 *Q. velutina* Lam. f. *missouriensis* (Sarg.) Trel.* - Black Oak - *Castaner et al. 2451*
548 *Q. shumardii* Buckl. var. *shumardii* - Shumard Oak - *Castaner 4361, 4406*
550 *Q. palustris* Muenchh. - Pin Oak - *Castaner 4362*
551 *Q. rubra* L. var. *rubra* - Northern Red Oak - *Castaner 2485*
551 *Q. X hawkinsiae* Sudw.* - Putative hybrid of *Q. rubra* and *Q. velutina* - *Castaner 4359*

ULMACEAE (4)

554 *Ulmus americana* L. - American Elm - *Mullikin 1044*
555 *U. rubra* Muhl. - Slippery Elm - *Mullikin 1039, Castaner 3867, Larrabee 40*
555 *U. pumila* L.* - Siberian Elm - *Priesendorf s.n.*
558 *Celtis occidentalis* L. var. *canina* (Raf.) Sarg.* - Hackberry - *Mullikin 1077*

MORACEAE (3)

562 *Morus rubra* L. - Red Mulberry - *Mullikin 440, Castaner 5981, McNair s.n.*
563 *Maclura pomifera* (Raf.) Schneid. - Osage Orange - *Mullikin 1087*
566 *Humulus japonicus* Sieb. & Zucc.* - Japanese Hops - *Priesendorf 1111*

URTICACEAE (2)

567 *Urtica dioica* L. var. *procera* (Muhl.) Wedd.* - Tall Nettle - *Mullikin 921*
568 *Boehmeria cylindrica* (L.) Sw. - False Nettle - *Mullikin 836, Castaner 485, 4250*

SANTALACEAE (1)

572 *Comandra richardsiana* Fern. - Bastard Toadflax - *Mullikin 346*

ARISTOLOCHIACEAE (1)

572 *Asarum canadense* L. - Wild Ginger - *Mullikin 817*

POLYGONACEAE (12)

577 *Rumex acetosella* L. var. *acetosella* - Sour Dock - *Mullikin 382*
578 *R. verticillatus* L.* - Swamp Dock - *Mullikin 492*
578 *R. altissimus* Wood - Pale Dock - *Mullikin 342*
580 *R. crispus* L. - Sour Dock - *Oskins 200*
586 *Polygonum aviculare* L. var. *aviculare* - Knotweed - *Mullikin 951*
590 *P. pensylvanicum* L. var. *laevigatum* Fern. f. *laevigatum* - Smartweed - *Mullikin 983*
592 *P. persicaria* L. var. *persicaria** - Smartweed - *Mullikin 850*
592 *P. punctatum* Ell. var. *punctatum* - Water Smartweed - *Mullikin 1003*
593 *P. punctatum* var. *confertiflorum* (Meisn.) Fassett* - Smartweed - *Castaner 4255*
594 *P. hydropiperoides* Michx. var. *hydropiperoides* f. *hydropiperoides* - Wild Water Pepper - *Mullikin 983*
596 *P. virginianum* L. var. *virginianum* - Virginia Knotweed - *Mullikin 864*
597 *P. scandens* L. var. *scandens* - False Buckwheat - *Castaner 10154, Mullikin 897*

CHENOPODIACEAE (2)

610 *Chenopodium standleyanum* Aellen* - *Castaner 10188*
612 *C. album* L. - Lamb's Quarters - *Priesendorf 1093*

PHYTOLACCACEAE (1)

630 *Phytolacca americana* L. - Polkweed - *Mullikin 609*

AIZOCEAE (1)

632 *Mollugo verticillata* L. - Carpetweed - *Castaner 10006*

PORTULACACEAE (2)

633 *Portulaca oleracea* L. - Purslane - *Castaner 10009*
636 *Claytonia virginica* L. f. *virginica* - Spring Beauty - *Mullikin 84, Castaner 891*

CAROPHYLLACEAE (9)

640 *Paronychia fastigiata* (Raf.) Fern. - Forked Chickweed - *Castaner 10183*
642 *Arenaria serpyllifolia* L. var. *serpyllifolia* - Thyme-leaved Sandwort - *Mullikin 183*
646 *Stellaria media* (L.) Cyrillo var. *media** - Common Chickweed - *Mullikin 240*
648 *Cerastium vulgatum* L. var. *vulgatum* f. *vulgatum* - Common Mouse-ear Chick weed - *Mullikin 242*
648 *C. nutans* Raf.* - Nodding Chickweed - *Mullikin 243*
652 *Holosteum umbellatum* L. - Jagged Chickweed - *Mullikin 169*
657 *Silene stellata* (L.) Ait. - Starry Campion - *Mullikin 648*
661 *Dianthus armeria* L. - Deptford Pink - *Mullikin 515*

ANNONACEAE (1)

671 *Asimina triloba* (L.) Dunal - Pawpaw - *Mullikin 726, Castaner 3861, Castaner 3866*

RANUNCULACEAE (10)

676 *Thalictrum revolutum* DC. f. *glabrum* Pennell - Meadow Rue - *Mullikin 633*
679 *Delphinium tricorne* Michx. f. *tricorne* - Dwarf Larkspur - *Mullikin 230, Castaner 1029*
682 *D. virescens* Nutt. - Prairie Larkspur - *Mullikin 1063*
683 *Isopyrum biternatum* (Raf.) T. & G. - False Rue Anemone - *Mullikin 85, Castaner 880*
688 *Ranunculus abortivis* L. var. *abortivus* f. *abortivus* - Small-flowered Crowfoot - *Mullikin 161, Mullikin 202, Castaner 1031*
694 *R. septentrionalis* Poir. var. *septentrionalis* - Swamp Buttercup - *Mullikin 145*
698 *R. fascicularis* Muhl. var. *apricus* (Greene) Fern.* - Early Buttercup - *Mullikin 132, 234, Castaner 1012*
700 *Anemone caroliniana* Walt. f. *caroliniana* - Prairie Anemone - *Mullikin 152*
702 *A. virginiana* L. f. *virginiana* - Thimbleweed - *Priesendorf 1115*
704 *Anemonella thalictroides* (L.) Spach f. *thalictroides* - Rue Anemone - *Mullikin 90, Wagner 49*

BERBERIDACEAE (1)

710 *Podophyllum peltatum* L. f. *peltatum* - May Apple - *Mullikin 218*

MENISPERMACEAE (1)

714 *Menispermum canadense* L. - Moonseed - *Mullikin 1035*

FUMARIACEAE (2)

724 *Dicentra cucullaria* (L.) Bernh. f. *cucullaria* - Dutchman's Breeches - *Mullikin 89*
725 *Corydalis micrantha* (Engelm.) Gray - Small-flowered Corydalis - *Mullikin 255*

BRASSICACEAE (14)

738 *Lepidium virginicum* L. var. *virginicum* - Pepper Grass - *Mullikin 470*
742 *Thlaspi perfoliatum* L. - Perfoliate Penny Cress - *Mullikin 158*
742 *Capsella bursa-pastoris* (L.) Medic. var. *bursa-pastoris* Shepherd's Purse - *Mullikin 127*
744 *Draba brachycarpa* Nutt. - Whitlow Grass - *Mullikin 74, Castaner 6123A2*
750 *Cardamine pensylvanica* Muhl. var. *pensylvanica* - Bitter cress - *Mullikin 227, Castaner 1034l*
751 *C. parviflora* L. var. *arenicola* (Britt.) O. E. Schulz - Small-flowered Bitter Cress - *Priesendorf s.n.*

751 *Dentaria laciniata* Muhl. - Toothwort - *Mullikin 131, 141, Castaner 899*
752 *Sibara virginica* (L.) Rollins - Sibara - *Mullikin 124*
756 *Arabis shortii* (Fern.) Gl. var. *phalacrocarpa* (M. Hopkins) Steyerm. - Rock Cress - *Mullikin 278*
757 *A. canadensis* L. - Sickle-pod - *Mullikin 461*
760 *Rorippa islandica* (Oeder) Borbas var. *fernaldiana* Butt. & Abbe - Marsh Yellow Cress - *Mullikin 538*
761 *Barbarea vulgaris* R. Br. var. *arcuata* (Opiz) Fries - Yellow Rocket - *Mullikin 178*
761 *Iodanthus pinnatifidus* (Michx.) Steud. - Purple Rocket - *Mullikin 602*
768 *Descurainia pinnata* (Walt.) Britt. var. *brachycarpa* (Richards.) Fern. - Tansey Mustard - *Mullikin 154*

SAXIFRAGACEAE (3)

774 *Penthorum sedoides* L. - Ditch Stonecrop - *Mullikin 885, Ulmer 101*
780 *Heuchera richardsonii* R. Br. var. *grayana* Rosend., Butt. & Lak. - Heuchera - *Mullikin 426*
785 *Ribes missouriense* Nutt. var. *missouriense* - Missouri Gooseberry - *Mullikin 159*

HAMAMELIDACEAE (1)

788 *Liquidambar styraciflua* L.* - Sweet Gum - *Castaner 5598.* Found in area adja cent to Pin Oak Slough; source unknown.

PLATANACEAE (1)

789 *Platanus occidentalis* L. var. *occidentalis* f. *occidentalis* - American Sycamore - *Mullikin 689*

ROSACEAE (23)

795 *Gillenia stipulata* (Muhl.) Trel. - Indian Physic - *Mullikin 547, Castaner 4519*
798 *Pyrus communis* L.* - Pear - *Castaner 6009*
799 *P. ioensis* (Wood) Carruth. [GP 396] = *P. ioensis* (Wood) Bailey - Iowa Wild Crab - *Brush 107*
800 *Amelanchier arborea* (Michx. f.) Fern. - Serviceberry - *Millikin 1045*
810 *Crataegus crus-galli* L. - Cockspur Thorn - *Mullikin 411*
818 *C. pruinosa* (Wendl.) K. Koch - Frosted Hawthorne - *Mullikin 325, Atkinson 47, Shroyer 81*
824 *Fragaria virginiana* Duchesne var. *illinoensis* (Prince) Gray - Wild Strawberry - *Mullikin 274, Burns 66*
827 *Potentilla simplex* Michx. var. *simplex* - Cinquefoil - *Larrabee 50*
827 *P. simplex* Michx. var. *calvescens* Fern.* - Cinquefoil - *Mullikin 281*
828 *P. norvegica* L. var. *norvegica** - Cinquefoil - *Mullikin 623*
830 *P. recta* L. - Rough-fruited Cinquefoil - *Mullikin 500*
831 *Geum vernum* (Raf.) T. & G. - Early Water Avens - *Mullikin 238*
832 *G. canadense* Jacq. var. *camporum* (Rydb.) Fern. & Weath. - White Avens -

Mullikin 729

835 *Rubus occidentalis* L. f. *occidentalis* - Black Raspberry - *Mullikin 319, Castaner 9537, Kirkman 53*
837 *R. flagellaris* Willd. - Dewberry - *Mullikin 642*
838 *R. enslenii* Tratt.* - Bramble - *Mullikin 351*
842 *R. ostryifolius* Rydb.* - High-bush Blackberry - *Mullikin 712*
846 *Agrimonia pubescens* Wallr. - Agrimony - *Mullikin 858, Castaner 10136*
849 *Rosa multiflora* Thunb.* - Multiflora Rose - *Mullikin 410*
849 *R. setigera* Michx. var. *tomentosa* T. & G. f. *tomentosa* - Prairie Rose - *Mullikin 762*
858 *Prunus mexicana* S. Wats. - Wild Plum - *Mullikin 475*
860 *P. hortulana* Bailey - Wild Goose Plum - *Mullikin 135*
862 *P. serotina* Ehrh. - Black Cherry - *Mullikin 334, 661*

FABACEAE (32)

870 *Desmanthus illinoensis* (Michx.) MacM. - Prairie Mimosa - *Mullikin 790, Castaner 296*
870 *Schrankia uncinata* Willd. - Sensitive Brier - *Mullikin 527*
872 *Gymnocladus dioica* (L.) K. Koch - Kentucky Coffee Tree - *Mullikin 708*
873 *Gleditsia triacanthos* L. f. *triacanthos* - Honey Locust - *Mullikin 483, 731*
873 *G. triacanthos* L. f. *inermis* (Pursh) Schneid.* - Thorn-less Honey Locust - *Castaner s.n.*
875 *Cassia fasciculata* Michx. var. *fasciculata* f. *fasciculata* - Partridge Pea - *Mullikin 775*
876 *Cercis canadensis* L. var. *canadensis* - Red Bud - *Thrutchley 146*
880 *Baptisia leucophaea* Nutt. var. *leucophaea* - Long-bracted Wild Indigo - *Mullikin 257*
881 *B. leucantha* T. & G. - White Wild Indigo - *Mullikin 691*
882 *Crotalaria sagittalis* L. var. *sagittalis* - Rattlebox - *Mullikin 639*
885 *Trifolium pratense* L. var. *pratense* f. *pratense* - Red Clover - *Mullikin 429*
886 *T. repens* L. f. *repens* - White Dutch Clover - *Mullikin 399*
887 *T. hybridum* L. var. *pratense* Rabenh.* - Alsike Clover - *Mullikin 430*
888 *T. reflexum* L. var. *reflexum* - Buffalo Clover - *Mullikin 1061*
890 *T. campestre* Schreb. - Large Hop Clover - *Mullikin 392, 1065*
891 *Medicago sativa* L. f. *sativa* - Alfalfa - *Mullikin 830*
891 *M. lupulina* L. var. *lupulina** - Black Medick - *Priesendorf 1090*
894 *Melilotus officinalis* (L.) Lam. - Yellow Sweet Clover - *Mullikin 427*
894 *M. albus* Desr. - White Sweet Clover - *Mullikin 550*
896 *Psoralea tenuiflora* Pursh var. *floribunda* (Nutt.) Rydberg f. *floribunda** - Scurfy Pea - *Mullikin 519*
900 *Petalostemon purpureum* (Vent.) Rydb. f. *purpureum* - Purple Prairie Clover - *Mullikin 605*
906 *Robinia pseudo-acacia* L. - Black Locust - *Mullikin 380, Castaner 4164*
908 *Astragalus distortus* T. & G. - Bent Milk Vetch - *Mullikin 327*
914 *Desmodium glutinosum* (Muhl) Wood f. *glutinosum* - Tick Trefoil - *Mullikin 702, Castaner 4161, 9539*

916 *D. canescens* (L.) DC. f. *canescens* - Tick Trefoil - *Mullikin 846, Castaner 303*
918 *D. rigidum* (Ell.) DC. - Tick Trefoil - *Mullikin 818*
922 *D. paniculatum* (L.) DC. var. *paniculatum* - Tick Trefoil - *Castaner 306*
928 *Lespedeza violacea* (L.) Pers. - Lespedeza - *Castaner 310*
929 *L. virginica* (L.) Britt. - Lespedeza - *Mullikin 894*
934 *L. cuneata* (Dumont) G. Don* - Sericea Lespedeza - *Mullikin 966, Castaner 295*
951 *Strophostyles helvola* (L.) Ell. var. *missouriensis* (S. Wats.) Britt. - Wild Bean - *Mullikin 870*
953 *Amphicarpa bracteata* (L.) Fern. var. *bracteata** - Hog eanut - *Castaner 300*

LINACEAE (1)

958 *Linum medium* (Planch.) Britt. var. *texanum* (Planch.) Fern.* - Flax - *Oskins 228*

OXALIDACEAE (3)

959 *Oxalis violacea* L. var. *violacea* f. *violacea* - Violet Wood Sorrel - *Mullikin 140*
959 *O. violacea* L. var. *violacea* f. *albida* Fassett - Violet Wood Sorrel* - *Haley 121*
959 *O. dillenii* Jacq. - Yellow Wood Sorrel - *Mullikin 383*

GERANIACEAE (2)

963 *Geranium maculatum* L. f. *maculatum* - Wild Geranium - *Mullikin 285*
963 *G. carolinianum* L. var. *carolinianum* - Cranesbill - *Mullikin 384*

BUTACEAE (2)

966 *Zanthoxylum americanum* (Mill.) - Prickly Ash - *Castaner 4909*
968 *Ptelea trifoliata* L. f. *trifoliata** - Hop Tree - *Priesendorf 1110*

EUPHORBIACEAE (8)

977 *Croton capitatus* Michx. var. *capitatus* - Hogwort - *Mullikin 823*
977 *C. monanthogynus* Michx. - Croton - *Mullikin 873*
979 *Acalypha virginica* L. - Three-seeded Mercury - *Castaner 10184*
986 *Euphorbia dentata* Michx. f. *dentata* - *Castaner 10153*
986 *E. heterophylla* L. var. *graminifolia* (Michx.) Engelm.* - Painted Leaf, Wild Poinsettia - *Castaner 10135*
992 *E. maculata* L. - Nodding Spurge - *Mullikin 925*
994 *E. supina* Raf. - Milk Purslane - *Castaner 10000*
996 *E. glyptosperma* Engelm.* - *Castaner 10140*

ANACARDIACEAE (5)

1000 *Rhus glabra* L. var. *glabra* - Smooth Sumac - *Mullikin 556*
1000 *R. copallina* L. var. *latifolia* Engler - Winged Sumac - *Priesendorf 1092*

1002 *R. aromatica* Ait. var. *aromatica* - Fragrant Sumac - *Mullikin 101, Haeffner 96*
1003 *R. aromatica* Ait. var. *serotina* (Greene) Rehd.* - Fragrant Sumac - *Mullikin 489*
1004 *Toxicodendron radicans* (L.) O. Kuntze* [GP 574] = *Rhus radicans* L. var. *radicans* f. *hypomalaca* Fern.; = *Rhus radicans* L. var. *vulgaris* (Michx.) DC. f. *negundo* (Greene) Fern. - Poison Ivy - *Mullikin 490, 748*

AQUIFOLIACEAE (1)

1007 *Ilex decidua** - Possum Haw - *Castaner 5982, 9998*

CELASTRACEAE (2)

1008 *Euonymus atropurpureus* Jacq. - Wahoo - *Mullikin 744, Kizer 150*
1010 *Celastrus scandens* L. - American Bittersweet - *Mullikin 408*

STAPHYLEACEAE (1)

1010 *Staphylea trifolia* L. - American Bladdernut - *Mullikin 724*

ACERACEAE (4)

1012 *Acer saccharum* Marsh f. *glaucum* (Schmidt) Pax* - Sugar Maple - *Priesendorf 1101*
1018 *A. saccharinum* L. - Silver Maple - *Mullikin 739*
1018 *A. negundo* L. var. *negundo* - Box Elder - *Mullikin 174, 660, Castaner 3872*
1019 *A. negundo* L. var. *interius* (Britt.) Sarg.* - Box Elder - *Mullikin 95, 276*

HIPPOCASTANACEAE (1)

1020 *Aesculus glabra* Willd. var. *glabra* f. *pallida* (K. Koch) Fern. - Ohio Buckeye - *Castaner 3869*

BALSAMINACEAE (1)

1026 *Impatiens capensis* Meerb. - Touch-me-not - *Mullikin 645*

RHAMNACEAE (1)

1030 *Ceanothus americanus* L. var. *pitcheri* T. & G. - New Jersey Tea - *Mullikin 649*

VITACEAE (6)

1031 *Ampelopsis cordata* Michx. - Raccoon Grape - *Mullikin 766*
1034 *Parthenocissus quinquefolia* (L.) Planch. f. *quinquefolia* - Virginia Creeper - *Mullikin 732*
1036 *Vitis. aestivalis* Michx. var. *aestivalis* - Summer Grape - *Mullikin 1073*

1037 *V. cinerea* Engelm. - Graybark Grape - *Mullikin 892*
1038 *V. riparia* Michx. var. *riparia* - River-bank Grape - *Mullikin 759*
1040 *V. vulpina* L. - Winter Grape - *Mullikin 513*

TILIACEAE (1)

1042 *Tilia americana* L. var. *americana* - Basswood - *Mullikin 734, Castaner 4677*

MALVACEAE (3)

1052 *Sida spinosa* L. - Prickly Sida - *Mullikin 1028*
1052 *Abutilon theophrasti* Medic. - Velvet Leaf - *Priesendorf 1089*
1054 *Hibiscus trionum* L. - Flower-of-an-hour - *Mullikin 755*

HYPERICACEAE (3)

1058 *Hypericum perforatum* L.* - Common St. John's-wort - *Mullikin 794*
1058 *H. punctatum* L. var. *punctatum* f. *punctatum* - St. John's-wort - *Mullikin 760*
1060 *H. sphaerocarpum* Michx. var. *sphaerocarpum* - St. John's-wort - *Mullikin 647*

VIOLACEAE (9)

1071 *Viola pedata* L. var. *pedata* - Bird's Foot Violet - *Castaner 1071, Crawford 53*
1071 *V. pedata* L. var. *lineariloba* DC. f. *lineariloba* - Bird's Foot Violet - *Mullikin 213*
1071 *V. pedata* L. var. *lineariloba* DC. f. *alba* (Thurb.) Britt.* - Bird's Foot Violet - *Mullikin 336*
1072 *V. papilionacea* Pursh. f. *papilionacea* - Common Violet - *Mullikin 104*
1074 *V. missouriensis* Greene - Missouri Violet - *Mullikin 360, Castaner 1015*
1074 *V. sororia* Willd. f. *sororia* - Woolly Blue Violet - *Mullikin 144, Castaner 2194*
1077 *V. viarum* Pollard f. *viarum** - Plains Violet - *Mullikin 344*
1080 *V. pensylvanica* Michx. var. *leiocarpa* (Fern. & Wieg.) Fern. - Smooth Yellow Violet - *Mullikin 143, 1079*
1081 *V. kitaibeliana* R. & S. var. *rafinesquii* (Greene) Fern. - Johnny Jump-up - *Mullikin 173, Falls 1*

LYTHRACEAE (3)

1088 *Rotala ramosior* (L.) Koehne var. *ramosior** - Tooth-cup *Mullikin 1021*
1090 *Lythrum alatum* Pursh - Winged Loosestrife - *Mullikin 600, Castaner 4166*
1092 *Cuphea petiolata* (L.) Koehne - Clammy Cuphea - *Mullikin 940*

ONAGRACEAE (6)

1094 *Ludwigia peploides* (H.B.K.) Raven [GP 515] = *Jussiaea repens* L. var. *glabre scens* Ktze. - Floating Primrose Willow - *Mullikin 803*
1096 *L. alternifolia* L. var. *pubescens* Palmer & Steyerm.* - Seedbox - *Oskins 384*
1101 *Oenothera biennis* L. var. *hirsutissima* Gray* - Evening Primrose - *Mullikin*

924

1105 *O. speciosa* Nutt. - White Evening Primrose - *Mullikin 616*
1106 *Gaura biennis* L. var. *biennis* - Biennial Gaura - *Mullikin 890*
1108 *Circaea quadrisulcata* (Maxim.) Franch. & Sav. var. *canadensis* (L.) Hara - Enchanter's Nightshade - *Mullikin 709, Castaner 4160*

APIACEAE (17)

1121 *Sanicula gregaria* Bicknell* - Black Snakeroot - *Oskins 138*
1121 *S. canadensis* L. var. *canadensis* - Black Snakeroot - *Mullikin 630*
1122 *Eryngium yuccifolium* Michx. var. *yuccifolium* - Rattlesnake Master - *Mullikin 816*
1125 *Chaerophyllum procumbens* (L.) Crantz var. *procumbens* - Wild Chervil - *Mullikin 246*
1125 *C. texanum* Coult. & Rose - *Mullikin 390*
1126 *Osmorhiza longistylis* (Torr.) DC. var. *longistylis** - Anise Root - *Mullikin 353*
1128 *O. longistylis* (Torr.) DC. var. *villicaulis* Fern.* - Anise Root - *Whithaus 127*
1128 *Torilis japonica* (Houtt.) DC. - Hedge Parsley - *Mullikin 608, 721*
1129 *Erigenia bulbosa* (Michx.) Nutt. - Harbinger of Spring - *Mullikin 70*
1134 *Cicuta maculata* L. var. *maculata* - Water Hemlock - *Oskins 382*
1134 *Cryptotaenia canadensis* (L.) DC. - Honewort - *Mullikin 467, 521*
1136 *Taenidia integerrima* (L.) Drude - Yellow Pimpernel - *Mullikin 258, 479*
1142 *Thaspium trifoliatum* (L.) Gray var. *flavum* Blake - Meadow Parsnip - *Mullikin 266, 352, 684, 1049*
1142 *T. barbinode* (Michx.) Nutt. var. *barbinode* - *Mullikin 735, Castaner 3750*
1146 *Polytaenia nuttallii* DC. - Prairie Parsley - *Mullikin 343*
1146 *Pastinaca sativa* L. - Parsnip - *Mullikin 614*
1147 *Daucus carota* L. f. *carota* - Wild Carrot - *Mullikin 553*

CORNACEAE (3)

1151 *Cornus florida* L. f. *rubra* (Weston) Palmer & Steyrm.* - Pink Flowering Dogwood - *Larrabee 48* - found along Hawk Nest Trail; the park is much older than the specimen; introduced by bird transport or planted.
1152 *C. drummondi* Meyer - rough-leaved dogwood - *Mullikin 559*
1152 *C. obliqua* Raf. - Swamp Dogwood - *Mullikin 477, Castaner 4408*

ERICACEAE (1)

1156 *Monotropa uniflora* L.* - Indian Pipe - *Castaner 417*

PRIMULACEAE (2)

1165 *Dodecatheon meadia* L. var. *meadia* f. *meadia* - Shooting Star - *Mullikin 251*
1166 *D. meadia* L. var. *brachycarpum* (Small) Fassett f. *brachycarpum* - Shooting Star - *Vogel 30*

EBENACEAE (1)

1175 *Diospyros virginiana* L. var. *virginiana* - Persimmon - *Mullikin 695*

OLEACEAE (2)

1179 *Fraxinus americana* L. var. *americana* - White Ash - *Mullikin 491, 1055, Castaner 3871*
1180 *F. pennsylvanica* Marsh. var. *subintegerrima* (Vahl.) Fern. - Green Ash - *Castaner 10133*

APOCYNACEAE (2)

1198 *Apocynum medium* Greene - *Mullikin 502*
1200 *A. cannabinum* L. var. *pubescens* (Mitchell) A. DC. - Indian Hemp - *Mullikin 761*

ASCLEPIADACEAE (8)

1202 *Asclepias viridis* Walt. - Green-flowered Milkweed - *Mullikin 528*
1203 *A. tuberosa* L. var. *interior* (Woodson) Shinners f. *interior* - Butterfly Weed - *Mullikin 625, Oskins 211*
1204 *A. purpurascens* L. - Purple Milkweed - *Mullikin 531, 1030*
1206 *A. quadrifolia* Jacq. - Woodland Milkweed - *Mullikin 403*
1206 *A. quadrifolia* Jacq. - Woodland Milkweed - *Castaner 1033* - Unnamed form with opposite leaves.
1206 *A. sullivantii* Engelm.* - Sullivan's Milkweed - *Mullikin 770*
1208 *A. verticillata* L. - Whorled Milkweed - *Mullikin 819*
1208 *A. hirtella* (Pennell) Woodson - Milkweed - *Mullikin 825*

CONVOLVULACEAE (8)

1214 *Ipomoea hederacea* (L.) Jacq. var. *hederacea* - Blue Morning Glory - *Mullikin 922*
1216 *I. purpurea* (L.) Roth - Common Morning Glory - *Mullikin 913*
1216 *I. lacunosa* L. - Small White Morning Glory - *Priesendorf 1104*
1218 *Convolvulus sepium* L. var. *fraterniflorus* Mackenz. & Bush - Hedge Bindweed - *Mullikin 719*
1220 *C. arvensis* L. f. *arvense** - Field Bindweed - *Mullikin 484*
1223 *Cuscuta gronovii* Wild.* - Dodder - *Southerland 7*
1223 *C. indecora* Choisy* - Dodder - *Priesendorf 1120.* Rarely reported in Missouri.
1224 *C. polygonorum* Engelm.* - Smartweed Dodder - *Castaner 10104*

POLEMONIACEAE (2)

1228 *Phlox divaricata* L. var. *laphamii* Wood f. *laphamii* - Blue Phlox - *Mullikin 229*
1229 *P. divaricata* L. var. *lamphamii* f. *candida* Palmer & Steyerm.* - White Blue

Phlox - *Oskins 91*

HYDROPHYLLACEAE (1)

1236 *Hydrophyllum appendiculatum* Michx. f. *appendiculatum* - Woollen Breeches - *Mullikin 398*

BORAGINACEAE (5)

1247 *Lithospermum arvense* L. - Corn Gromwell - *Mullikin 122*
1248 *L. canescens* (Michx.) Lehm. f. *canescens* - Puccoon - *Vogel 27*
1252 *Myosotis virginica* (L.) var. *virginica* BSP.* - Scorpion Grass - *Mullikin 273, 405, Castaner 1033*
1254 *Mertensia virginica* (L.) Pers. f. *virginica* - Virginia Bluebells - *Arnold 44*
1256 *Hackelia virginiana* (L.) I. M. Johnston* - Beggar's Lice - *Mullikin 805*

VERBENACEAE (6)

1257 *Verbena urticifolia* L. var. *urticifolia* - White Vervain - *Mullikin 847*
1258 *V. hastata* L. f. *hastata* - Blue Vervain - *Mullikin 841*
1260 *V. stricta* Vent. f. *stricta* - Vervain - *Mullikin 799*
1260 *V. bracteata* Lag. & Rodr. - Vervain - *Mullikin 563*
1261 *V. canadensis* (L.) Britt. f. *canadensis* - Rose Vervain - *Mullikin 516*
1261 *Lippia lanceolata* (Michx.) Greene - Frog Fruit - *Mullikin 711, Shea 82*

LAMIACEAE (14)

1268 *Teucrium canadense* L. var. *virginicum* (L.) Eat. - Wood Sage - *Mullikin 699,737*
1271 *Scutellaria ovata* Hill. var. *versicolor* (Nutt.) Fern.* - *Oskins 247*
1271 *S. lateriflora* L. var. *lateriflora* - Mad-dog Skullcap - *Priesendorf 1098*
1276 *S. parvula* Michx. var. *australis* Fassett - Southern Small Skullcap - *Mullikin 307, Castaner 1016*
1279 *Prunella vulgaris* L. var. *lanceolata* (Bart.) Fern. - Self-Heal - *Mullikin 784*
1285 *Lamium amplexicaule* L. f. *amplexicaule* - Henbit - *Mullikin 164*
1285 *L. purpureum* L. - Dead Nettle - *Castaner sight record*
1287 *Stachys tenuifolia* Willd. var. *tenuifolia* - Hedge Nettle - *Mullikin 919*
1291 *Monarda fistulosa* L. var. *mollis* (L.) Benth. - Horsemint - *Mullikin 750*
1296 *Hedeoma pulegioides* (L.) Pers. - Pennyroyal - *Castaner 10187*
1296 *H. hispida* Pursh - Pennyroyal - *Mullikin 469*
1299 *Pycnanthemum tenuifolium* Schrad. - Slender Mountain Mint - *Mullikin 720*
1302 *Lycopus americanus* Muhl. var. *americanus* - American Bugleweed - *Mullikin 1023, Castaner 4405*
1306 *Mentha spicata* L. - Spearmint - *Mullikin 1022*

SOLANACEAE (5)

1312 *Solanum americanum* Mill. - Black Nightshade - *Mullikin 916*

1313 *S. carolinense* L. f. *carolinense* - Horse Nettle - *Mullikin 497*
1313 *S. carolinense* L. f. *albiflorum* Benke* - White Horse Nettle - *Castaner 10155*
1317 *Physalis virginiana* Mill. - Ground Cherry - *Mullikin 443*
1318 *P. longifolia* Nutt. var. *longifolia* - Ground Cherry - *Castaner 10156*

SCROPHULARIACEAE (14)

1330 *Paulownia tomentosa* (Thunb.) Steud.* - Empress Tree - *Mullikin 698*
1334 *M. alatus* Ait. f. *alatus* - Monkey Flower - *Mullikin 777, Castaner 4253, Knowles 96*
1338 *Lindernia dubia* (L.) Pennell var. *riparia* (Raf.) Fern.* - *Mullikin 715*
1339 *Verbascum thapsus* L. f. *thapsus* - Common Mullein - *Mullikin 607*
1339 *V. blattaria* L. f. *erubescens* Brugger* - Mullein - *Mullikin 551*
1343 *Penstemon digitalis* Nutt. f. *digitalis* Steyerm. - Beard Tongue - *Mullikin 544*
1344 *P. pallidus* Small - Pale Beard Tongue - *Mullikin 562, 1060*
1346 *Scrophularia marilandica* L. f. *marilandica* - Figwort - *Mullikin 853*
1347 *Collinsia verna* Nutt. - Blue-eyed Mary - *Mullikin 147, 215, Brizendine 50*
1351 *Veronicastrum virginicum* (L.) Farw. - Culver's Root - *Mullikin 1108*
1356 *Veronica peregrina* L. var. *xalapensis* (HBK.) Pennell* - Neckweed - *Mullikin 188*
1356 *Veronica arvensis* L. - Corn Speedwell - *Mullikin 182*
1360 *Agalinus tenuifolia* (Vahl) Raf. [GP 755] = *Gerardia tenuifolia* Vahl var. *tenuifolia* - Gerardia - *Mullikin 904, Castaner 298, 9532*
1366 *Pedicularis canadensis* L. f. *canadensis* - Wood Betony - *Mullikin 259*

BIGNONIACEAE (1)

1368 *Campsis radicans* (L.) Seem. - Trumpet Creeper - *Priesendorf s.n.*

OROBANCHACEAE (1)

1374 Orbanche uniflora L. - One-flowered Cancer-root - *Mullikin 300, Thomas 78*

ACANTHACEAE (4)

1376 *R. strepens* L. f. *strepens* - Wild Petunia - *Mullikin 634*
1376 *Ruellia humilis* Nutt. var. *humilis* f. *humilis* - Wild Petunia - *Castaner 10138*
1376 *R. humilis* Nutt. var. *longiflora* (Gray) Fern. f. *longiflora** - Wild Petunia - *Mullikin 764*
1378 *Justicia americana* (L.) Vahl - Water Willow - *Oskins 237*

PLANTAGINACEAE (5)

1382 *Plantago rugelii* Dcne. var. *rugelii* - Rugel's Plantain - *Mullikin 800*
1384 *P. lanceolata* L. var. *lanceolata* - English Plantain - *Mullikin 459*
1384 *P. aristata* Michx. - Bracted Plantain - *Mullikin 566*
1385 *P. virginica* L. var. *virginica* - Hoary Plantain - *Mullikin 362*

1385 *P. pusilla* Nutt. var. *pusilla** - Plantain - *Mullikin 291*

RUBIACEAE (8)

1389 *Galium aparine* L. - Cleavers, Goose Grass - *Mullikin 275*
1389 *G. triflorum* Michx. var. *triflorum* - Sweet-scented Bedstraw - *Mullikin 1001*
1390 *G. circaezans* Michx. var. *hypomalacum* Fern. - Wild Licorice - *Mullikin 541*
1394 *G. obtusum* Bigel. var. *obtusum** - Bedstraw - *Mullikin 509*
1395 *G. concinnum* T. & G. - Bedstraw - *Mullikin 632, Lewis 80*
1396 *Diodia teres* Walt. var. *teres* - Rough Buttonweed - *Mullikin 828*
1398 *Cephalanthus occidentalis* L. var. *occidentalis* f. *occidentalis* - Buttonbush - *Mullikin 692, 778, Castaner 297*
1400 *Houstonia minima* Beck f. *minima* - Bluets - *Mullikin 72*

CAPIFOLIACEAE (8)

1405 *Lonicera maackii* (Rupr.) Maxim.* - Shrubby Honeysuckle - *Castaner 9891, Priesendorf 1119* - [see Redfearn (1986) for a discussion of this adventitive species]
1406 *L. morrowii* Gray* - Honeysuckle - *Mullikin 217*
1410 *Symphoricarpos orbiculatus* Moench f. *orbiculatus* - Buckbrush - *Mullikin 889*
1410 *Triosteum perfoliatum* L. - Common Horse Gentian - *Mullikin 1083*
1411 *T. aurantiacum* Bickn. var. *illinoense* (Wieg.) Palmer & Steym.* - *Mullikin 936*
1414 *Viburnum prunifolium* L. - Black Haw - *Mullikin 206, 664, Castaner 3868*
1415 *V. rufidulum Raf.** - Southern Black Haw - *Mullikin 758*
1418 *Sambucus canadensis* L. var. *canadensis* f. *canadensis* - Common Elderberry - *Mullikin 722, 875*

VALERIANACEAE (1)

1421 *Valerianella radiata* (L.) Dufr. var. *missouriensis* Dyal - Corn Salad - *Mullikin 422*

CUCUCURBITACEAE (1)

1428 *Sicyos angulatus* L. - Bur Cucumber - *Mullikin 786, Castaner 487*

CAMPANULACEAE (5)

1430 *Campanula americana* L. - Tall Bellflower - *Mullikin 787*
1433 *Triodanis perfoliata* (L.) Nieuw. [GP 815] = *Specularia perfoliata* (L.) A. DC. f. *perfoliata* - Venus' Looking Glass - *Mullikin 494*
1436 *Lobelia inflata* L.* - Indian Tobacco - *Mullikin 809*
1437 *L. spicata* Lam. var. *spicata* - Lobelia - *Mullikin 473, Oskins 179*
1438 *L. siphilitica* L. var. *siphilitica* f. *siphilitica* - Blue Cardinal Flower - *Mullikin 1032*

ASTERACEAE (66)

1460 *Vernonia missurica* Raf. f. *missurica* - Ironweed - *Mullikin 822*
1460 *V. baldwini* Torr. var. *baldwini* - Ironweed - *Mullikin 772*
1463 *Eupatorium altissimum* L. - Tall Thoroughwort - *Mullikin 971*
1466 *E. serotinum Michx.* - Late Boneset - *Priesendorf 1102*
1466 *E. rugosum* Houtt. var. *tomentellum* (Robins.) Blake* - White Snake Root - *Mullikin 918*
1472 *Liatris aspera* Michx. f. *aspera* - Blazing Star - *Mullikin 956, Castaner 4349*
1476 *L. squarrosa* (L.) Michx. var. *squarrosa* - Blazing Star - *Mullikin 774, Stidham 313, Castaner 4348*
1492 *Solidago nemoralis* Ait. var. *decemflora* (DC.) Fern.* - Old-field Goldenrod - *Schumacher 300*
1495 *S. ulmifolia* Muhl. var. *ulmifolia* - Elm-leaf Goldenrod - *Mullikin 857*
1496 *S. canadensis* L. var. *scabra* T. & G. [GP 1003] = *Solidago altissima* L. - Tall Goldenrod - *Mullikin 985*
1498 *S. gigantea* Ait. var. *leiophylla* Fern. - Late Goldenrod - *Mullikin 793*
1512 *Aster drummondii* Lindl. - Drummond Aster - *Mullikin 899, Castaner 4416*
1512 *A. patens* Ait. var. *patens* - Spreading Aster - *Priesendorf 1118*
1515 *A. turbinellus* Lindl. - *Mullikin 933, Castaner 4418*
1516 *A. pilosus* Willd. var. *pilosus** - White Heath Aster - *Castaner 4417*
1516 *A. pilosus* Willd. var. *demotus* Blake - White Heath Aster - *Castaner 10148* - An interesting specimen; it may represent a hybrid since blue-purple flowered. White Heath Aster is rare. The specimen is also similar in some ways to *Aster falcatus* Lindl. [= *A. commutatus* (T. & G.) Gray], which is also usually white.
1516 *A. pilosus* Willd. var. *platyphyllus* (T. & G.) Blake* - White Heath Aster - *Mullikin 953*
1522 *A. praealtus* Poir. var. *angustior* Wieg.* - Willow-leaved Aster - *Mullikin 1031*
1526 *Erigeron annuus* (L.) Pers. f. *annuus* - Daisy Fleabane - *Mullikin 1064*
1528 *E. strigosus* Muhl. var. *strigosus* - Fleabane - *Mullikin 448, Castaner 9538*
1528 *E. strigosus* Muhl. var. *beyrichii* (Fisch. & Mey.) T. & G.* - Fleabane - *Mullikin 456*
1529 *Conyza canadensis* (L.) Cronquist [GP 914] = *Erigeron canadensis* L. - Horseweed - *Mullikin 958*
1533 *Antennaria plantaginifolia* (L.) Hook. var. *plantaginifolia* - Pussy's Toes - *Mullikin 201*
1534 *Gnaphalium obtusifolium* L. var. *obtusifolium* - Sweet Everlasting - *Mullikin 965*
1537 *Ambrosia bidentata* Michx. - Ragweed - *Oskins 249*
1538 *A. trifida* L. var. *trifida* f. *trifida* - Horse Weed - *Mullikin 929*
1538 *A. trifida* L. var. *trifida* f. *integrifolia* (Muhl.) Fern.* - Horse Weed - *Castaner 299*
1538 *A. artemisiifolia* L. var. *elatior* (L.) Descourt. f. *elatior* - Common Ragweed - *Castaner 10134*
1548 *Silphium integrifolium* Michx. var. *integrifolium* f. *integrifolium* - Rosin-weed - *Mullikin 791*

1552 *Parthenium integrifolium* L. var. *integrifolium* - American Feverfew - *Mullikin 444, Mullikin 472, 522, 679, 1051, Castaner 4521*
1553 *Heliopsis helianthoides* (L.) Sweet var. *occidentalis* (Fisher) Steyerm. - Sweet Ox-eye - *Mullikin 900*
1554 *Eclipta alba* (L.) Hassk. - Yerba de Tajo - *Mullikin 954*
1557 *Rudbeckia laciniata* L. var. *laciniata* - Goldenglow - *Mullikin 907*
1557 *R. subtomentosa* Pursh f. *subtomentosa* - Sweet Coneflower - *Mullikin 898*
1558 *R. hirta* L. - Black-eyed Susan - *Mullikin 548*
1560 *R. triloba* L. var. *triloba* - Brown-eyed Susan - *Mullikin 789, Castaner 304*
1562 *Echinacea purpurea* (L.) Moench var. *purpurea* f. *purpurea* - Purple Coneflower - *Mullikin 807*
1562 *E. pallida* Nutt. f. *pallida* - Pale-purple Coneflower - *Mullikin 545*
1563 *Ratibida pinnata* (Vent.) Barnh. - Gray-head Coneflower - *Oskins 235*
1570 *Helianthus rigidus* (Cass) Desf. subsp. *rigidus* [GP956] = *H. laetiflorus* Pers. var. *laetiflorus* - Prairie Sunflower - *Castaner 10137*
1572 *H. hirsutus* Raf. var. *trachyphyllus* T.& G.* - Sunflower - *Mullikin 792, 802*
1575 *H. tuberosus* L. - Girasole (Jerusalem artichoke) - *Mullikin 930*
1578 *Verbesina helianthoides* Michx. - Crown-beard - *Castaner 3749*
1578 *V. alternifolia* (L.) Britt. - Yellow Ironweed - *Mullikin 895, Shroyer 194*
1582 *Coreopsis palmata* Nutt. - Tickseed - *Mullikin 612*
1586 *Bidens connata* Muhl. var. *petiolata* (Nutt.) Farw.* - Beggar Ticks - *Mullikin 974*
1587 *B. frondosa* L. var. *frondosa* f. *frondosa** - Beggar Ticks - *Mullikin 912*
1590 *B. polylepis* Blake - Tickseed Sunflower - *Mullikin 1019*
1590 *B. bipinnata* L. - Spanish Needles - *Mullikin 941*
1599 *Achillea millefolium* L. var *millefolium* f. *millefolium* - Common Milfoil - *Mullikin 401*
1602 *Anthemis cotula* L. - Mayweed - *Mullikin 1094*
1605 *Chrysanthemum leucanthemum* L. var. *pinnatifidum* Lecoq. & Lamotte f. *pinnatifidium* - Ox-eye Daisy - *Mullikin 514*
1611 *Erechtites hieracifolia* (L.) Raf. var. *hieracifolia* - Fireweed - *Castaner 10142*
1612 *Cacalia atriplicifolia* L. - Pale Indian Plantain - *Mullikin 945, Shea 176*
1615 *Senecio plattensis* Nutt. - Prairie Ragwort - *Mullikin 239, Legg 91*
1618 *S. obovatus* Muhl.* - Squaw-weed - *Kirkman 30*
1619 *Arctium minus* (Hill) Bernh. f. *minus* - Common Burdock - *Mullikin 910*
1622 *Cirsium altissimum* (L.) Spreng. f. *altissimum* - Tall Thistle - *Priesendorf 1108*
1628 *Serinia oppositifolia* (Raf.) Ktze.* - Nipplewort - *Mullikin 560*
1629 *Cichorium intybus* L. f. *intybus* - Chicory - *Mullikin 569*
1634 *Tragopogon dubius* Scop. - Goat's Beard - *Mullikin 533, 1076*
1634 *Taraxacum laevigatum* (Willd.) DC.* [GP 1010] = *T. erythrospermum* Andrz. - Red-seeded Dandelion - *Mullikin 235*
1635 *T. officinale* Wiggers - Common Dandelion - *Mullikin 231*
1638 *Lactuca scariola* L. f. *scariola** - Prickly Lettuce - *Mullikin 780*
1639 *L. saligna* L. f. *ruppiana* (Wallr.) G. Beck* - Willow-leaved Lettuce - *Mullikin 881*
1646 *Pyrrhopappus carolinianus* (Walt.) DC. - False Dandelion - *Mullikin 613*

Acknowledgements

An appreciative thanks is given to the Department of Natural Resources, and especially Sheila Larrabee, Park Naturalist, Knob Noster State Park, for her help in this project.

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SUMMER OPPORTUNITIES FOR FIELD COURSES

Summer opportunities for field courses in 1989 offered at Biological Field Stations are summarized in a poster prepared by the Organization of Biological Field Stations. Most offerings are intended for undergraduate and graduate students in Biology. For a copy, contact Dr. Richard W. Coles, Secretary OBFS, Washington University Tyson Research Center, P. O. Box 351, Eureka, MI 63025.

MISSOURIENSIS 9 (2) 1988

TWO WOODY TAXA OF NOTEWORTHY OCCURRENCE IN SOUTHWEST MISSSOURI

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INTRODUCTION

During the fall of 1988, populations of *Hamamelis virginiana* L. and *Liriodendron tulipifera* L. were found growing within the boundaries of Piney Creek Wilderness Area in Barry County. The area is an 8,430 acre watershed that drains into the James River arm of Table Rock Reservoir. The terrain is extremely rugged consisting of a number of high ridges with adjacent deep hollows, thus providing a variety of habitats and a high diversity of species. Both species occur naturally in Missouri, in localities that are over 322 kilometers(200 miles) to the east. *Hamamelis virginiana* grows on wooded north-facing hillsides in the southeastern Ozark Region, and *Liriodendron* is known only from Crowley's Ridge in extreme southeast Missouri. Due to its abundance, there is little doubt that *H. virginiana* is a naturally occurring population, but it is questionable whether the small population of *Liriodendron* represents a naturally occurring disjunct relict or is, in fact, the result of an introduction many years ago by settlers who came from the southeastern U.S. where *Liriodendron* is a common member of the flora.

LIRIODENDRON TULIPIFERA IN SOUTHWEST MISSOURI RELIC OR PLANTED?

On August 5, 1988 about 5.5 kilometers (3.4 miles) upstream and east of the James River arm of Table Rock Reservoir, the senior author discovered a population of about 6 trees of *Liriodendron tulipifera.* The largest individuals had DBHs (Diameters at Breast Height) of 56.4 centimeters(22.2 inches) and 46.7 cm(18.4 in.) with the biggest estimated to be approximately 90 years old as determined by using an increment bore core sample. Other individuals ranged from 14.4 cm (5.65 in.) to 14.7 cm (5.8 in.) and appear to have resulted from reproduction of the larger trees.

It is difficult to determine whether the population represents a relict or an introduction. In Missouri, individuals of Tulip Poplar have been found in natural surroundings away from Crowley's Ridge, but there is little doubt that these have been planted. Evidence of an old homesite exists approximately .75 km (0.5 miles) downstream from the Piney Creek population, which could indicate that these trees were introduced.

However, based upon the phytogeography of the Ozarks of southwest Missouri, these trees could represent a naturally occurring relict. The Ozark Region and the

Appalachian Highlands have had a similar physiographic and floristic history. During the Tertiary both of these areas were covered by a mixed mesophytic forest, which still persists in the Appalachians. Subsequent drying of the Ozarks Region during late Tertiary and post glacial times has resulted in a decline in importance and/or elimination of many mixed mesophytic species. However, a few scattered individuals of some species remain. It is, perhaps, significant that certain associates of *Liriodendron* in the southern Appalachians, also exist as rare, scattered taxa in the Ozarks. Two such associates of *Liriodendron* are *Cladrastis lutea* and *Magnolia acuminata*. The latter species occurs with *Liriodendron* in eastern Missouri on Crowley's Ridge. In the rugged section of the White River and its tributaries, *Magnolia acuminata* also has been found in Barry County, but, according to Steyermark (1963), it "has been exterminated by the creation of...Table Rock dam, since the trees had occupied the low valleys of these areas." The other associate, *Cladrastis lutea* occurs in several restricted areas on protected north-facing bluffs. One such occurrence is approximately 2.5 km(1.6 miles) from the *Liriodendron* location. Thus, if one considers the phytogeographic history of Missouri, the population of *L. tulipifera* in Piney Creek Wilderness could represent a relict, natural population.

A RANGE EXTENSION FOR HAMAMELIS VIRGINIANA IN MISSOURI

On October 21, 1988, *Hamamelis virginiana*, a second species of noteworthy occurrence, was discovered at Piney Creek. This taxon is considered rare in Missouri and restricted to the southeastern Ozarks, where Shannon County has been considered the western-most limit of its range (Steyermark 1963). A more common, closely related species, *H. vernalis*, has a distribution which extends across the southern part of Missouri into the extreme southwestern corner of the state. These two species are difficult to distinguish in the vegetative state and differ primarily in flower color and structure, time of flowering, and habitat (See Table 1).

Since *H. virginiana* was in full bloom in October, positive identification of this taxon was possible and individuals were marked for future studies. On a more recent field trip to the area on February 18, 1989, *H. vernalis* was in bloom and its distribution also marked. As a result of these positive identifications, a map of the local distribution of these taxa was prepared (Figure 1). When leaves are present at a later date, more detailed morphological studies are planned in an effort to see if vegetative characters, overlooked in the past, could be present that might serve to separate these two species.

The occurrence of *Hamamelis virginiana* at Piney Creek Wilderness extends the western limits of its range over a considerable distance. The presence of this population in southwest Missouri may be explained in two ways. One, it represents a disjunct range extension similar to *Liriodendron tulipifera, Magnolia acuminata,* and *Cladrastis lutea*. Thus, just as these species might be considered relicts in the drier Ozark forest of the White River drainage, so *H. virginiana* might also be included in this list.

A second explanation of its presence at Piney Creek is that it does not really

represent a disjunct population at all. It may be that field work in late fall may reveal its occurrence in intervening areas of Missouri. It is the last of all woody plants in eastern North America to flower and its most obvious distinction from *H. vernalis* is in flower structure and time of flowering. Much less field work occurs from October to December, and in all probability individuals of *Hamamelis* without flowers are often identified as the common species, *H. vernalis*. Therefore, *Hamamelis virginiana* may, in fact, be more common than believed and may occur at a

TABLE 1

Comparison of **Hamamelis vernalis** and **H. virginiana**

	H. vernalis	**H. virginiana**
FLOWER COLOR	Petals yellow or reddish with red to orange at base, calyx-lobes reddish, orange, yellow, yellowish-green, or salmon inside	Petals completely yellow, calyx-lobes brownish-yellow, yellowish-green, or or greenish inside
FLOWER STRUCTURE	Petals 10-15 mm long	Petals 15-20 mm long
TIME OF FLOWERING	January to April	September to December
HABITAT	Gravel or rocky streambeds or base of rocky slopes along streams	Wooded north-facing and in valleys along streams

number of of localities between Barry and Shannon counties. It is suggested that Missouri botanists who know of *Hamamelis* populations in this area, make a special effort to search for these populations at the appropriate time of the year.

The following voucher specimens have been deposited in the Ozarks Regional Herbarium (SMS): *Liriodendron tulipifera, Rebman 830; Hamamelis virginiana Rebman 842.*

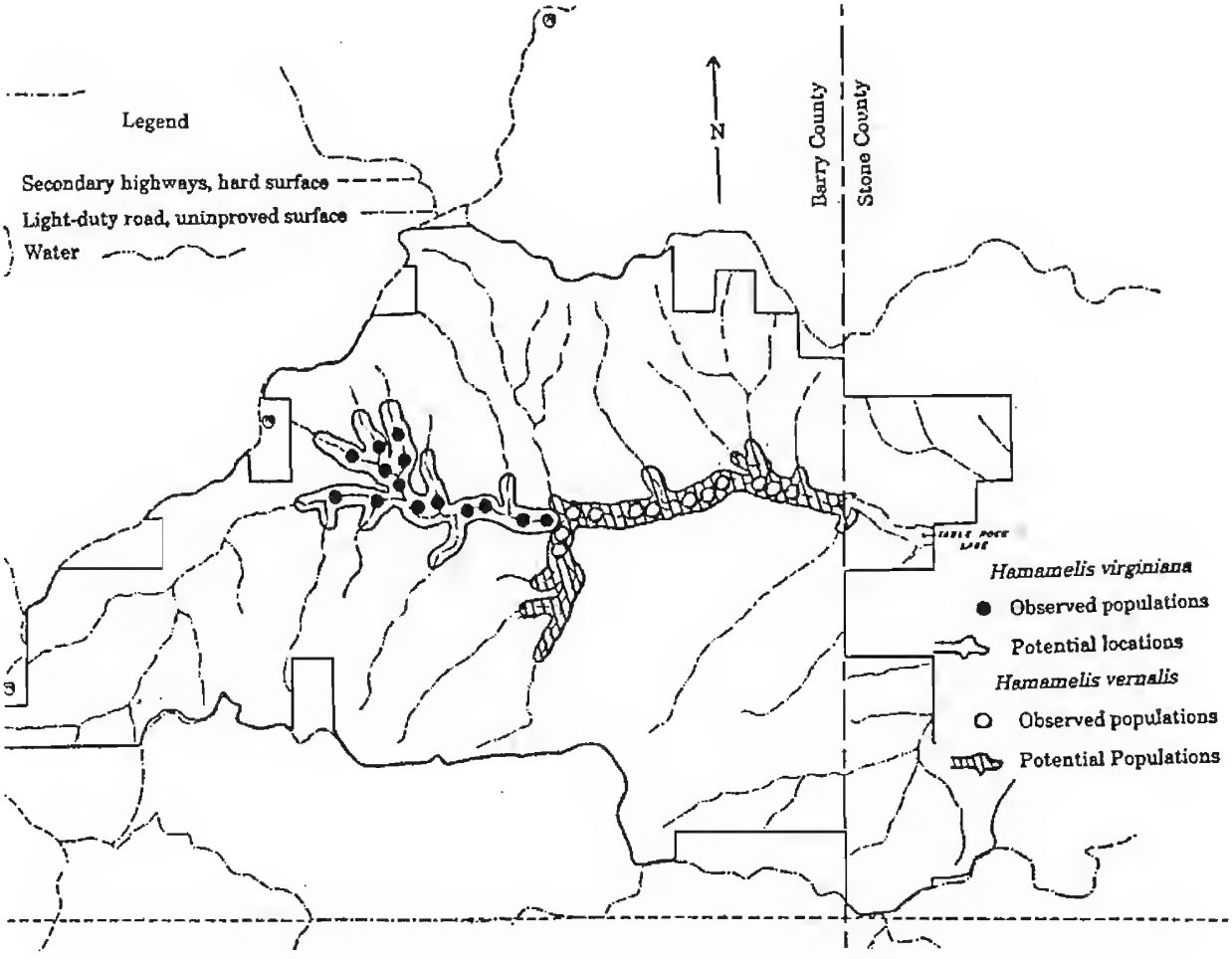

Figure 1. Distribution of *Hamamelis virginiana* and *H. vernalis* in the Piney Creek Wilderness Area.

The authors wish to thank Dr. David Castilon for his assistance in the preparation of the map, as well as his help in dating the *Liriodendron* core samples. In addition, a special thanks is extended to Dr. Paul Redfearn for his beneficial advice and guidance throughout the project.

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MINUTES OF THE DECEMBER 3, 1988, BOARD MEETING

Call to Order. The meeting was called to order by President Doug Ladd at 10:15 am. Other board members present were: Herb Domke, Melvin Conrad, Wally Weber, Sue Taylor, Joanna Turner, Ginny Wallace, Mervin Wallace, Bill Summers, Sue Hollis, Louise Wienckowski, Linda Ellis, Karen Haller and Lynda Richards. Other attendees were: Tim Nigh, George Yatskievych, Kay Yatskievych, Matt Gray and Al Haller.

Minutes of the Previous Meeting. Since all board members had seen a copy of the September 17 Minutes, the board voted to waive reading of the minutes and they were approved as written.

Treasurer's Report. Treasurer Mervin Wallace reported income from dues and from checking account interest totaling $147.34 since 9/17/88 and disbursements of $220.20, leaving a balance on hand of $3,519.29 on 12/1/88. Membership is at 422, up from 417 in September. But this total will go down to about 350 when files are purged of non-renewals in February or March.

Committee Reports

Missouri Flora Atlas Committee. Wally Weber said that he, Melvin Conrad and Jay Ravell had finished checking the data entries from Steyermark. He plans to print out a current version and distribute it among our members for a final check. Other records will then be incorporated. A preliminary atlas will come out by spring, with a later definitive edition to coincide with the Steyermark revision.

Membership Committee. Ginny Wallace reminded chapters that the state treasurer needs new chapter treasurer names to put on dues notices. She plans to send new member sign-ups to the nearest chapter so they can contact new members immediately. The next issue of *Missouriensis* will have a membership list current as of July.

Newsletter. There was discussion of prices for printing, folding and stapling in different cities and of whether "Petal Pusher" could be mailed from Kansas City rather than Jefferson City where our bulk mailing permit is held. Ideas for getting more chapter information into "Petal Pusher" included distribution of board meeting minutes to chapter representatives.

Field Trip Committee. No report.

Environmental and Education Committee. No report.

Editorial Committee. Paul Redfearn sent a written report. Volume 9 (1) is nearly ready for the printer; volume 9 (2) could be ready within a few months. The appointment of George Yatskievych to the editorial committee was approved at

Paul's request.

Old Business

Conservation Federation of Missouri Membership. Kay Yatskievych reported on her experiences as MoNPS representative to CFM over the past year. There was lengthy discussion both before and after a motion to retain our membership. The motion was defeated by a vote of 12 to 2. A second motion, to earmark $400 for conservation, carried.

Pins. Linda Ellis' drawing of a pink-and-green *Cypripedium reginae* on white enamel, with a gold edge, was applauded. A motion passed that Linda send out the design, get a batch of pins for approval and have three board members help her approve the work. An initial order for 500 pins will be placed. Pins will be sold on a card with the Society's name.

Draft Financial Plan. Doug Ladd and Mervin Wallace submitted a draft financial plan to place the Society on a sustainable healthy footing. They estimated our annual operating expenses at $2,800 and proposed a dues structure to meet these expenses. (Board members suggested deleting the Sponsoring and Sustaining categories and adding a Lifetime category at $200.) Suggestions were made on financing special projects and small grants. A targeted lapsed membership mailing will be done. The next round of dues notices will include an explanation of the need for the dues increase.

New Business

Native Plant Legislation. The next newsletter will give details of two new laws proposed by the Department of Conservation. Purple loosestrife, *Lythrum salicaria*, will be declared a noxious weed, and its importation a class A misdemeanor. In a second measure, wild plant theft will be made a class B misdemeanor. Verbal permission will be needed to collect any wild plant parts from state or private land.

Native Plant List. Matt Grey of the Columbia chapter pointed out the need for a site-specific list of recommended native plants for restoration work. He voiced concerns about the inadvertent introduction of exotics and of foreign genotypes which could cause problems in the future. Ginny Wallace has a list of native plants to distribute. But the Society is not yet in a position to recommend specific plants because success can't be guaranteed.

Nominating Committee. Ginny Wallace, Doug Ladd, and Herb Domke were appointed.

10th Annual Meeting/Symposium. The Columbia and Jefferson City chapters will host this one-day meeting at Fulton on June 18, 1989. There will be a series of papers and related field trips. Probable themes are "how geology affects plants" with a trip to Graham Cave Park; and "gardening with native plants" with trips to Herb

Domke's prairie, Merv Wallace's nursery, and roadsides. Governor Ashcroft may be asked to declare a "Wildflower Day."

April 15-16 Board Meeting. The St. Louis Chapter will host this board meeting, beginning with a Friday night social at Shaw Garden. Field trip possibilities include St. Stanislaus County Park, Pelican Island, the Arboretum, Pacific Palisades, Robertsville State Park, and Calloway Fork. Spring wildflowers should be at their peak!

Announcements. Ginny Wallace distributed copies of a native plants list from the Native Plants Conference in Memphis, which she attended. Herb Domke displayed material from the Society for Ecological Restoration and Management. Doug Ladd said that The Nature Conservancy is taking applications for burn crew members. Salary, food, and lodging are included, along with valuable experience; students are encouraged to apply. Doug also mentioned that MDC was the first state agency to recognize the importance of tropical forest conservation. MDC'S endangered species newsletter had good news: two major herb dealers banned *Cypripedium* collection, and bad: pitcher plant collections continue on the coastal savannas.

Chapter Reports.

Jefferson City. Herb Domke, chapter representative, reported that George Yatskievych will be giving a talk soon. Their attractive new exhibit was on display, and they have offered to allow other chapters to borrow it. The chapter has adopted a 1.5-acre piece of highway right-of-way. Mervin Wallace will supply $800 worth of seed for members to plant.

Kansas City. Sue Hollis described how the program and the following field trip will be coordinated. The Pittsburg-Midway Coal Company salvage is still in progress.

St. Louis. Bill Summers said that 35-45 members turn out for the programs on the fourth Thursday of each month. He listed some programs, trips, and activities, such as a trip to Holly Preserve for yellow fringed orchids, and a contribution to the Steyermark Fund. John Wiley will speak at the chapter's fifth anniversary program and dinner in February.

Kirksville. Melvin Conrad reported that they planted native plants on a University-owned tract in October, holding off as long as possible in hopes of rain. No meetings have been planned, but the group will help TNC burn a small prairie.

Columbia. Members looked for rare species at Little Dixie Wildlife Area and will advise managers on woodland wildflowers. Other activities occurred at Bates Prairie, Grindstone Nature Area, and Shelter Insurance Gardens, where a map of native species locations was made. They have also helped with the Katy Trail and had displays at community events.

Springfield. The chapter planted 50 verbena plants, donated by Mervin Wallace, at the Springfield Nature Center. Four garden areas will be planted this spring with member-donated plants. There are 25-30 members now, with monthly events. Wally Weber will be giving a program on poisonous plants.

Adjournment.

The meeting was adjourned at 3:45 pm.

Respectfully submitted,
Lynda Richards, Secretary

MISSOURI BOTANICAL RECORD

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The *Missouri Botanical Record* is the official register for new county records of all vascular plant taxa in Missouri. To qualify for inclusion in this record, a voucher specimen of the record taxon must be deposited in a recognized herbarium and verified by the curator. Following the format used below, please submit all records to Dr. Wallace R. Weber, Department of Biology, Southwest Missouri State University, Springfield, MO 65804-0095.

In the *Flora of Missouri*, Steyermark used only a single map number to refer to each species, even though several subspecific taxa were listed. In these instances, various symbols were used to represent each taxon on a single Missouri map with counties. In the *Missouri Botanical Record* a decimal system is used, with .1 assigned to the first subspecific taxon listed by Steyermark under each map, .2 for the second, and so on. Point nine nine (.99) is used to designate a species in which Steyermark included one or more subspecific taxa, but which was not specified by the collector. Point zero nine (.09) identifies a taxon not included by Steyermark. The letters 'v' and 'f ' refer to variety and form respectively, while 'nv' indicates that no subspecific category has been recognized.

Contributors for this issue include: Bill Summers, Karen Haller, and John Molyneaux, St. Louis, MO; Ginny Wallace, Department of Conservation, Jefferson City, MO; Patrick Delozier, Kansas City, MO; and Peter Hoell, Eureka, MO.

MAP #	TAXON	COUNTY	DATE	COLLECTOR	HERB
5.09	SELAGINELLA ECLIPES NV	ST. LOUIS	03/22/79	SUMMERS (1579A)	MO
10.10	EQUISETUM ARVENSE V. ARVENSE	CHARITON	08/08/83	DELOZIER (1453)	MO
12	EQUISETUM LAEVIGATUM NV	DOUGLAS	6/5/81	SUMMERS(NONE)	MO
12	EQUISETUM LAEVIGATUM NV	HOWELL	5/9/83	SUMMERS&WALLACE(NONE)	MO
13.10	EQUISETUM HYEMALE V. AFFINE	LAFAYETTE	08/02/83	DELOZIER (1346)	MO
13.10	EQUISETUM HYEMALE V. AFFINE	LAFAYETTE	06/28/83	DELOZIER (1268)	MO
13.10	EQUISETUM HYEMALE V. AFFINE	CARROLL	08/08/83	DELOZIER (1404)	MO
14	BOTRYCHIUM DISSECTUM V.DISSECTUM	DOUGLAS	7/18/82	SUMMERS(NONE)	MO
14.20	BOTRYCHIUM DISSECTUM V. TENUIFOLIUM	OREGON	09/14/86	SUMMERS (1638)	MO
14.20	BOTRYCHIUM DISSECTUM V.OBLIQUUM	OREGON	8/16/81	SUMMERS(NONE)	MO
17	OPHIOGLOSSUM ENGELMANNI NV	DOUGLAS	5/13/83	SUMMERS&WALLACE(NONE)	MO
46	ASPLENIUM X EBENOIDES NV	OREGON	07/04/86	SUMMERS (1597)	MO
54.99	CYSTOPTERIS FRAGILIS NV	DOUGLAS	5/9/83	SUMMERS&WALLACE(NONE)	MO
67.20	JUNIPERUS VIRGINIANA V. PENDULA	STONE	11/08/86	SUMMERS (1662)	MO
86	ZANNICHELLIA PALUSTRIS V. MAJOR	WEBSTER	08/04/86	SUMMERS (1627A)	MO
90.99	ALISMA PLANTAGO AQUATICA NV	CARROLL	08/08/83	DELOZIER (1398)	MO
92.10	ECHINODORUS BERTEROI V. LANCEOLATUS	ST. CHARLES	08/17/86	SUMMERS (1630)	MO
92.99	ECHINODORUS BERTEROI NV	CARROLL	08/08/83	DELOZIER (1405)	MO
92.99	ECHINODORUS BERTEROI NV	CHARITON	08/08/83	DELOZIER (1450)	MO
106	BROMUS INERMIS NV	CARROLL	08/08/83	DELOZIER (1400)	MO
120.99	FESTUCA ELATIOR NV	CHARITON	08/08/83	DELOZIER (1448)	MO
120.99	FESTUCA ELATIOR NV	CARROLL	08/08/83	DELOZIER (1366)	MO
133	POA COMPRESSA NV	HOWELL	07/05/86	SUMMERS (1606)	MO
147	ERAGROSTIS PECTINACEA NV	CHARITON	08/08/83	DELOZIER (1431)	MO
147	ERAGROSTIS PECTINACEA NV	CARROLL	08/08/83	DELOZIER (1362)	MO
147	ERAGROSTIS PECTINACEA NV	SALINE	08/08/83	DELOZIER (1465)	MO
147	ERAGROSTIS PECTINACEA NV	COOPER	10/10/83	DELOZIER (1524)	MO
148	ERAGROSTIS CILIANENSIS NV	CHARITON	08/08/83	DELOZIER (1432)	MO

149	ERAGROSTIS POAEOIDES NV	CARROLL	08/08/83	DELOZIER (1368)	MO
164	DACTYLIS GLOMERATA NV	CARROLL	08/08/83	DELOZIER (1388)	MO
164	DACTYLIS GLOMERATA NV	COLE	05/08/86	DELOZIER (1937)	MO
164	DACTYLIS GLOMERATA NV	ST.FRANCIS	05/08/86	DELOZIER (1955)	MO
164	DACTYLIS GLOMERATA NV	PHELPS	05/08/86	DELOZIER (1945)	MO
164	DACTYLIS GLOMERATA NV	OSAGE	05/08/86	DELOZIER (1941)	MO
183.99	ELYMUS CANADENSIS NV	LAFAYETTE	09/17/82	DELOZIER (509)	MO
183.99	ELYMUS CANADENSIS NV	CARROLL	08/08/83	DELOZIER (1382)	MO
185.99	ELYMUS VIRGINICUS NV	PETTIS	10/03/82	DELOZIER (658)	MO
234.99	SPOROBOLUS NEGLECTUS NV	STONE	11/08/86	SUMMERS (1666)	MO
256	ELEUSINE INDICA NV	HOWARD	08/08/83	DELOZIER (1463)	MO
256	ELEUSINE INDICA NV	DADE	08/28/84	DELOZIER (1621)	MO
256	ELEUSINE INDICA NV	CARROLL	08/08/83	DELOZIER (1386)	MO
263	CHLORIS VERTICILLATA NV	GREENE	6/6/82	SUMMERS(NONE)	MO
271	PHALARIS ARUNDINACEA NV	PUTNAM	07/11/84	DELOZIER (1586)	MO
282	ERIOCHLOA CONTRACTA NV	MONTGOMERY	10/10/83	DELOZIER (1510)	MO
282	ERIOCHLOA CONTRACTA NV	COOPER	10/10/83	DELOZIER (1531)	MO
340	SETARIA GLAUCA NV	CARROLL	08/08/83	DELOZIER (1378)	MO
340	SETARIA GLAUCA NV	CAMDEN	09/07/85	DELOZIER (1800)	MO
341	SETARIA GENICULATA NV	HOWELL	07/05/86	SUMMERS (1598)	MO
343.10	SETARIA VIRIDIS V. VIRIDIS	CEDAR	08/29/84	DELOZIER (1617)	MO
343.10	SETARIA VIRIDIS V. VIRIDIS	CARROLL	08/08/83	DELOZIER (1390)	MO
344.10	SETARIA FABERI NV	CARROLL	08/08/83	DELOZIER (1376)	MO
349	ERIANTHUS ALOPECUROIDES NV	DOUGLAS	10/27/82	DELOZIER (781)	MO
358	SORGHUM HALEPENSE NV	CHARITON	08/08/83	DELOZIER (1446)	MO
358	SORGHUM HALEPENSE NV	SALINE	08/08/83	DELOZIER (1469)	MO
358	SORGHUM HALEPENSE NV	HOWARD	08/08/83	DELOZIER (1457)	MO
379	CYPERUS STRIGOSUS V.STRIGOSUS	OREGON	9/17/79	SUMMERS(NONE)	WARM
385.10	CYPERUS FILICULMIS V.MACILENTUS	SAINTLOUIS	7/3/79	SUMMERS(NONE)	WARM
393.99	ELEOCHARIS ACICULARIS V.ACICULARIS	ST.FRANCOIS	5/2/79	SUMMERS(NONE)	WARM

408	SCIRPUS VERECUNDUS NV	HOWELL	5/9/83	SUMMERS(NONE)	WARM
421.20	SCIRPUS ATROVIRENS V.GEORGIANUS	DOUGLAS	5/13/83	SUMMERS(NONE)	WARM
431.10	RHYNCHOSPORA CORNICULATA V. CORNICULATA	SHANNON	06/08/85	SUMMERS (1528)	MO
446.99	CAREX RETROFLEXA NV	GREENE	4/25/82	SUMMERS(NONE)	WARM
448	CAREX ROSEA NV	HOWELL	6/2/82	SUMMERS(NONE)	WARM
448	CAREX ROSEA NV	BOLLINGER	5/15/84	SUMMERS&WALLACE(NONE)	WARM
448	CAREX ROSEA NV	BOLLINGER	5/16/84	SUMMERS&WALLACE(NONE)	WARM
452.10	CAREX MUHLENBERGII V.ENERVIS	ST.FRANCOIS	5/3/81	SUMMERS(NONE)	WARM
461.99	CAREX STIPATA NV	DOUGLAS	6/5/81	SUMMERS(NONE)	WARM
468	CAREX TRIBULOIDES NV	RALLS	6/25/83	SUMMERS&WALLACE(NONE)	WARM
483	CAREX ARTITECTA NV	HOWELL	3/22/80	SUMMERS(NONE)	WARM
493	CAREX MEADII NV	HOWELL	05/01/86	SUMMERS (1590)	MO
493	CAREX MEADII NV	ST.FRANCOIS	5/2/79	SUMMERS(NONE)	WARM
500	CAREX BLANDA NV	BOLLINGER	5/15/84	SUMERS&WALLACE(NONE)	WARM
503	CAREX CRAWEI NV	OZARK	6/9/80	SUMMERS(NONE)	WARM
508.10	CAREX AMPHIBOLA V.RIGIDA	BOLLINGER	5/15/84	SUMMERS&WALLACE(NONE)	WARM
517.10	CAREX COMPLANATA V.HIRSUTA	HOWELL	6/2/82	SUMMERS(NONE)	WARM
517.10	CAREX COMPLANATA V.HIRSUTA	DOUGLAS	5/13/83	SUMMERS(NONE)	WARM
532	CAREX HYSTERICINA NV	HOWELL	6/2/82	SUMMERS(NONE)	WARM
548.99	CAREX LUPULINA NV	DOUGLAS	6/5/81	SUMMERS(NONE)	WARM
554	ACORUS CALAMUS NV	OSAGE	6/6/84	SUMMERS(NONE)	MO
555	SPIRODELA POLYRHIZA NV	RAY	06/28/83	DELOZIER (1252)	MO
569	TRADESCANTIA ERNESTIANA F.ERNESTIANA	HOWELL	5/12/83	SUMMERS&WALLACE(NONE)	MO
570.99	TRADESCANTIA VIRGINIANA NV	HOWELL	5/18/84	SUMMERS(NONE)	MO
581.99	PONTEDERIA CORDATA NV	HOWELL	7/21/84	SUMMERS(NONE)	MO
583	HETERANTHERA LIMOSA NV	CARROLL	08/08/83	DELOZIER (1401)	MO
584	HETERANTHERA DUBIA NV	HOWELL	8/20/82	SUMMERS(NONE)	MO
585	JUNCUS EFFUSUS NV	ST.FRANCOIS	5/12/79	SUMMERS(NONE)	WARM
585	JUNCUS EFFUSUS V.SOLUTUS	DOUGLAS	6/5/83	SUMMERS(NONE)	WARM
601	JUNCUS TORREYI NV	LAFAYETTE	09/17/82	DELOZIER (521)	MO

610	ZIGADENUS ELEGANS NV	HOWELL	7/17/82	SUMMERS(NONE)	MO
610	ZIGADENUS ELEGANS NV	HOWELL	7/17/82	SUMMERS(NONE)	SMS
613	MELANTHIUM VIRGINICUM NV	TEXAS	06/21/86	SUMMERS (1595)	MO
622	ALLIUM MUTABILE NV	GASCONADE	6/6/84	SUMMERS(NONE)	MO
626.10	HEMEROCALLIS FULVA V. FULVA	LAFAYETTE	06/28/83	DELOZIER (1273)	MO
639	ASPARAGUS OFFICINALIS NV	CALDWELL	06/21/83	DELOZIER (1202)	MO
639	ASPARAGUS OFFICINALIS NV	SALINE	08/08/83	DELOZIER (1466)	MO
647.99	TRILLIUM RECURVATUM NV	OZARK	5/13/83	SUMMERS&WALLACE(NONE)	MO
651	SMILAX PULVERULENTA NV	BOLLINGER	5/15/84	SUMMERS&WALLACE(NONE)	MO
652.10	SMILAX HERBACEA V.LASIONEURON	DOUGLAS	6/5/83	SUMMERS(NONE)	MO
678.20	SISYRINCHIUM CAMPESTRE F. KANSANUM	PETTIS	04/27/86	SUMMERS (1581)	MO
679	SISYRINCHIUM BERMUDIANA NV	OSAGE	05/08/86	DELOZIER (1939)	MO
682	CYPRIPEDIUM CALCEOLUS V.PARVIFLORUM	TEXAS	5/18/84	SUMMERS(NONE)	MO
685	ORCHIS SPECTABILIS NV	DOUGLAS	5/9/83	SUMMERS&WALLACE(NONE)	MO
685	ORCHIS SPECTABILIS NV	HOWELL	5/12/83	SUMMERS&WALLACE(NONE)	MO
687	HABENARIA FLAVA V.FLAVA	HOWELL	6/23/84	SUMMERS(NONE)	MO
689.10	HABENARIA LACERA V. LACERA	GASCONADE	06/14/88	HALLER & MOLYNEAUX S.N.	MO
690.09	PLATANTHERA PRAECLARA NV	ATCHISON	06/15/85	SUMMERS (1531)	MO
697	CALOPOGON TUBEROSUS NV	HOWELL	05/14/85	SUMMERS (1510)	MO
699	SPIRANTHES TUBEROSA NV	CAMDEN	09/08/85	SUMMERS (1538)	MO
700	SPIRANTHES GRACILIS NV	CAMDEN	09/08/85	SUMMERS (1539)	MO
700	SPIRANTHES GRACILIS NV	ST. FRANCOIS	08/31/85	SUMMERS (1536)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	CAMDEN	10/04/85	SUMMERS (1571)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	CHRISTIAN	10/06/85	SUMMERS (1579)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	JEFFERSON	09/29/85	SUMMERS (1570)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	STONE	10/05/85	SUMMERS (1578)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	HOWELL	9/21/81	SUMMERS(NONE)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	STONE	10/3/81	SUMMERS(NONE)	MO
702.09	SPIRANTHES MAGNICAMPORUM NV	JEFFERSON	10/27/84	SUMMERS(NONE)	MO
703	SPIRANTHES OVALIS NV	CAMDEN	09/08/85	SUMMERS (1540)	MO

703	SPIRANTHES OVALIS NV	SAINTLOUIS	9/17/81	SUMMERS(NONE)	MO
704.09	SPIRANTHES LACERA NV	HOWELL	10/6/83	SUMMERS(NONE)	MO
705	GOODYERA PUBESCENS NV	HOWELL	9/29/81	SUMMERS(NONE)	MO
707	CORALLORHIZA WISTERIANA NV	DOUGLAS	5/9/83	SUMMERS&WALLACE(NONE)	MO
707	CORALLORHIZA WISTERIANA NV	OZARK	5/13/83	SUMMERS&WALLACE(NONE)	MO
707	CORALLORHIZA WISTERIANA NV	DOUGLAS	6/5/83	SUMMERS(NONE)	MO
708	CORALLORHIZA ODONTORHIZA NV	PULASKI	09/15/85	SUMMERS (1563)	MO
708	CORALLORHIZA ODONTORHIZA F.ODONTORHIZA	HOWELL	9/29/81	SUMMERS(NONE)	MO
712	APLECTRUM HYMALE F.HYMALE	HOWELL	9/29/81	SUMMERS(NONE)	MO
737.99	POPULUS DELTOIDES NV	RANDOLPH	8/25/86	PELTON(NONE)	MO
739.99	JUGLANS NIGRA NV	GENTRY	1986	LANGFELDT&SCHMIDT(NONE)	MO
739.99	JUGLANS NIGRA NV	WARREN	1986	ROBINE(NONE)	MO
741	CARYA ILLINOENSIS NV	CALLAWAY	7/24/86	PELTON(NONE)	MO
741	CARYA ILLINOENSIS NV	RALLS	1986	LONG(NONE)	MO
744.99	CARYA CORDIFORMIS NV	GENTRY	1986	LANGFELDT&SCHMIDT(NONE)	MO
746	CARYA LACINIOSA NV	DAVIESS	7/23/86	HUFFMAN(NONE)	MO
746	CARYA LACINIOSA NV	PETTIS	5/4/85	PALMER(NONE)	MO
746	CELTIS LAEVIGATA NV	RALLS	9/29/86	LONG(NONE)	MO
746	CARYA LACINIOSA NV	RANDOLPH	8/4/86	PELTON(NONE)	MO
747.99	CARYA TOMENTOSA NV	CALLAWAY	7/30/86	PELTON(NONE)	MO
747.99	CARYA TOMENTOSA NV	SHELBY	1986	LONG(NONE)	MO
748.99	CARYA GLABRA NV	MONITEAU	7/22/86	PELTON(NONE)	MO
749.99	CARYA OVATA NV	LAWRENCE	8/27/85	PALMER(NONE)	MO
749.99	CARYA OVATA NV	WARREN	1986	ROBINE(NONE)	MO
750.99	CARYA TEXANA NV	CARROLL	7/24/86	HUFFMAN,HERSHEY&DEWITT(N)	MO
750.99	CARYA TEXANA NV	LEWIS	1986	LONG(NONE)	MO
754	BETULA NIGRA NV	HOWARD	9/4/86	PELTON(NONE)	MO
757	CASTANEA DENTATA NV	TEXAS	NONE	UNKNOWN(NONE)	MO
758.09	CASTANEA MOLLISSIMA NV	OZARK	5/13/83	SUMMERS&WALLACE(NONE)	MO
760.99	QUERCUS STELLATA NV	WARREN	1986	ROBINE(NONE)	MO
762.99	QUERCUS MACROCARPA NV	MONITEAU	7/22/86	PELTON(NONE)	MO

763	QUERCUS BICOLOR NV	CALLAWAY	7/30/86	PELTON(NONE)	MO
763	QUERCUS BICOLOR NV	CARROLL	8/7/85	HERSHEY&KUENNEN(NONE)	MO
763	QUERCUS BICOLOR NV	HOWARD	9/4/86	PELTON(NONE)	MO
766	QUERCUS IMBRICARIA NV	HOLT	1986	LANGFELDT&SCHMIDT(NONE)	MO
769	QUERCUS MARILANDICA NV	CLARK	1986	LONG(NONE)	MO
769	QUERCUS MARILANDICA NV	SHELBY	1986	LONG(NONE)	MO
774.99	QUERCUS SHUMARDII NV	HOWARD	9/4/86	PELTON(NONE)	MO
775	QUERCUS PALUSTRIS NV	CARROLL	8/7/85	HERSHEY(NONE)	MO
779	ULMUS THOMASI NV	LEWIS	1986	LONG(NONE)	MO
784.99	CELTIS OCCIDENTALIS NV	LINCOLN	1986	ROBINE(NONE)	MO
784.99	CELTIS OCCIDENTALIS NV	RANDOLPH	6/10/86	PELTON(NONE)	MO
784.99	CELTIS OCCIDENTALIS NV	WARREN	1986	ROBINE(NONE)	MO
786.99	CELTIS LAEVIGATA NV	CHARITON	8/7/85	HERSHEY(NONE)	MO
786.99	CELTIS LAEVIGATA NV	COOPER	9/19/86	PELTON(NONE)	MO
790	MACLURA POMIFERA NV	GENTRY	1986	LANGFELDT&SCHMIDT(NONE)	MO
790	MACLURA POMIFERA NV	LAWRENCE	8/27/85	PALMER(NONE)	MO
791	CANNABIS SATIVA NV	CARROLL	08/08/83	DELOZIER (1395)	MO
793	HUMULUS JAPONICUS NV	LAFAYETTE	08/02/83	DELOZIER (1353)	MO
817	RUMEX OBTUSIFOLIUS NV	BATES	08/28/84	DELOZIER (1605)	MO
821	POLYGONUM ERECTUM NV	PULASKI	09/15/85	SUMMERS (1560)	MO
823.10	POLYGONUM AVICULARE V. AVICULARE	COLE	05/08/86	DELOZIER (1938)	MO
823.10	POLYGONUM AVICULARE V. AVICULARE	BARTON	08/28/84	DELOZIER (1627)	MO
824	POLYGONUM TENUE NV	LAWRENCE	10/04/85	SUMMERS (1574)	MO
849.20	CHENOPODIUM AMBROSIOIDES V. ANTHELMINTHICUM	DOUGLAS	10/26/82	DELOZIER (776)	MO
877	AMARANTHUS TAMARISCINUS NV	CARROLL	08/08/83	DELOZIER (1375)	MO
877	AMARANTHUS TAMARISCINUS NV	RAY	10/01/82	DELOZIER (636)	MO
882	AMARANTHUS HYBRIDUS NV	CARROLL	08/08/83	DELOZIER (1374)	MO
883	AMARANTHUS RETROFLEXUS NV	CARROLL	08/08/83	DELOZIER (1384)	MO
886	AMARANTHUS GRAECIZANS NV	CHARITON	08/08/83	DELOZIER (1454)	MO
886	AMARANTHUS GRAECIZANS NV	CARROLL	08/08/83	DELOZIER (1413)	MO

890	FROELICHIA GRACILIS NV	GREENE	9/24/83	SUMMERS(NONE)	MO
891	MIRABILIS NYCTAGINEA NV	BUCHANAN	06/06/86	DELOZIER (2033)	MO
893	MIRABILIS ALBIDA NV	OREGON	8/15/81	SUMMERS(NONE)	MO
900	PORTULACA OLERACEA NV	ATCHISON	06/27/84	DELOZIER (1574)	MO
900	PORTULACA OLERACEA NV	MORGAN	07/27/85	DELOZIER (1735)	MO
900	PORTULACA OLERACEA NV	HOWELL	7/11/83	SUMMERS(NONE)	MO
918.10	STELLARIA MEDIA VAR. MEDIA	WEBSTER	03/16/85	SUMMERS (1507)	MO
922.99	CERASTIUM VULGATUM NV	HENRY	04/18/86	DELOZIER (1908)	MO
922.99	CERASTIUM VULGATUM NV	ST. CLAIR	04/18/86	DELOZIER (1911)	MO
923	CERASTIUM ARVENSE V.VILLOSUM-F.OBLONGIFOLIUM	DOUGLAS	5/10/83	SUMMERS&WALLACE(NONE)	MO
926	CERASTIUM VICOSIUM NV	GREENE	4/19/84	SUMMERS(NONE)	MO
949	DIANTHUS ARMERIA NV	PETTIS	06/14/83	DELOZIER (1165)	MO
950	DIANTHUS PROLIFER NV	GREENE	6/6/82	SUMMERS(NONE)	MO
950	DIANTHUS PROLIFER NV	GREENE	6/6/82	SUMMERS(NONE)	SMS
961	LIRIODENDRON TULIPIFERA NV	OZARK	11/26/83	SUMMERS(NONE)	MO
963	HYDRASTIS CANADENSIS NV	OREGON	5/17/84	SUMMERS(NONE)	MO
965	ACTAEA PACHYPODA NV	OZARK	5/13/83	SUMMERS&WALLACE(NONE)	MO
972	DELPHINIUM TRICORNE F.TRICORNE	DOUGLAS	6/5/83	SUMMERS(NONE)	MO
976.99	DELPHINIUM VIRESCENS NV	BUCHANAN	06/06/86	DELOZIER (2038)	MO
995	RANUNCULUS SARDOUS NV	CAPEGIRARDEAU	5/15/84	SUMMERS(NONE)	MO
995	RANUNCULUS SARDOUS NV	HOWELL	7/21/84	SUMMERS(NONE)	MO
997	MYOSURUS MINIMUS NV	CASS	04/09/85	DELOZIER (1654)	MO
1002	HEPATICA NOBILIS V.OBTUSA	BOLLINGER	(NODATE)	SUMMERS&WALLACE(NONE)	MO
1003.20	ANEMONELLA THALICTROIDES F.FAVILLIANA	OZARK	5/13/83	SUMMERS&WALLACE(NONE)	MO
1004.10	CLEMATIS VIRGINIANA F.MISSOURIENSIS	HOWELL	7/18/82	SUMMERS(NONE)	MO
1004.99	CLEMATIS VIRGINIANA NV	CARROLL	08/08/83	DELOZIER (1397)	MO
1004.99	LEPIDIUM CAMPESTRE NV	STONE	04/29/85	DELOZIER (1689)	MO
1019.99	SASSAFRAS ALBIDUM NV	CARROLL	8/7/85	HERSHEY(NONE)	MO
1026	PAPAVER DUBIUM NV	GREENE	6/6/82	SUMMERS(NONE)	MO
1031	DICENTRA CANADENSIS	MADISON	04/16/88	HOELL (S.N.)	MO

1051.10	LEPIDIUM VIRGINICUM V. VIRGINICUM	HICKORY	04/25/86	DELOZIER (1920)	MO
1051.10	LEPIDIUM VIRGINICUM V. VIRGINICUM	DOUGLAS	10/26/82	DELOZIER (770)	MO
1056	THLASPI ARVENSE NV	PETTIS	04/09/85	DELOZIER (1660)	MO
1057	THLASPI PERFOLIATUM NV	DADE	04/03/86	DELOZIER (1902)	MO
1062.99	DRABA VERNA NV	GREENE	4/19/84	SUMMERS(NONE)	MO
1065.20	DRABA REPTANS V. MICRANTHA	BUCHANAN	04/03/85	DELOZIER (1652)	MO
1075	CARDAMINE PARVIFLORA V.ARENICOLA	GREENE	4/19/84	SUMMERS(NONE)	MO
1090.10	RORIPPA ISLANDICA V.FERNALDIANA	RALLS	6/10/84	SUMMERS(NONE)	MO
1094	HESPERIS MATRONALIS NV	JOHNSON	06/14/83	DELOZIER (1154)	MO
1099.99	SISYMBRIUM OFFICINALE NV	WEBSTER	6/6/82	SUMMERS(NONE)	MO
1101	SISYMBRIUM LOESELII NV	WEBSTER	5/26/81	SUMMERS(NONE)	MO
1109.10	POLANISIA DODECANDRA V. DODECANDRA	PULASKI	09/15/85	SUMMERS (1544)	MO
1114	SEDUM TERNATUM NV	WRIGHT	9/24/83	SUMMERS(NONE)	MO
1116	PENTHORUM SEDOIDES NV	HOWELL	8/20/82	SUMMERS(NONE)	MO
1150	PYRUS IOENSIS NV	LEWIS	1986	LONG(NONE)	MO
1168.99	CRATAEGUS VIRIDIS NV	LEWIS	1986	LONG(NONE)	MO
1200.99	CRATAEGUS CALPODENDRON NV	LEWIS	1986	LONG(NONE)	MO
1209.99	POTENTILLA SIMPLEX NV	HOLT	06/14/86	DELOZIER (2045)	MO
1211.10	POTENTILLA NORVEGICA NV	LAFAYETTE	08/02/83	DELOZIER (1354)	MO
1220.10	GEUM LACINIATUM V. TRICHOCARPUM	BUCHANAN	06/06/86	DELOZIER (2037)	MO
1235.10	RUBUS PENSILVANICUS F.ALBINUS	OREGON	7/18/82	SUMMERS(NONE)	MO
1241	AGRIMONIA PUBESCENS NV	OREGON	8/15/81	SUMMERS(NONE)	MO
1259	PRUNUS AMERICANA NV	CARROLL	8/7/85	HERSHEY(NONE)	MO
1259	PRUNUS AMERICANA NV	CLARK	1986	LONG(NONE)	MO
1259	PRUNUS AMERICANA NV	MERCER	8/8/85	HERSHEY&MORGAN(NONE)	MO
1266	PRUNUS SEROTINA NV	CALLAWAY	7/8/86	PELTON(NONE)	MO
1266	PRUNUS SEROTINA NV	MONITEAU	7/22/86	PELTON(NONE)	MO
1266	PRUNUS SEROTINA NV	RANDOLPH	6/10/86	PELTON(NONE)	MO
1272	GYMNOCLADUS DIOICA NV	RANDOLPH	8/25/86	PELTON(NONE)	MO
1272	GYMNOCLADUS DIOICA NV	TEXAS	1986	SMITH(NONE)	MO

1272.99	GYMNOCLADUS DIOICA NV	WRIGHT	NONE	UNKNOWN(NONE)	MO
1291	TRIFOLIUM ARVENSE NV	HOWELL	07/22/86	SUMMERS (1622)	MO
1293.99	TRIFOLIUM REPENS NV	CALDWELL	06/21/83	DELOZIER (1196)	MO
1293.99	TRIFOLIUM REPENS NV	COLE	05/08/86	DELOZIER (1936)	MO
1293.99	TRIFOLIUM REPENS NV	OSAGE	05/08/86	DELOZIER (1942)	MO
1293.99	TRIFOLIUM REPENS NV	HOWELL	6/4/83	SUMMERS(NONE)	MO
1301.10	MEDICAGO SATIVA F. SATIVA	CARROLL	08/08/83	DELOZIER (1402)	MO
1302.99	MEDICAGO LUPULINA NV	OSAGE	05/08/86	DELOZIER (1940)	MO
1302.99	MEDICAGO LUPULINA NV	COLE	05/08/86	DELOZIER (1935)	MO
1302.99	MEDICAGO LUPULINA NV	CRAWFORD	05/09/86	DELOZIER (1946)	MO
1302.99	MEDICAGO LUPULINA NV	OSAGE	05/08/86	DELOZIER (1940)	MO
1302.99	MEDICAGO LUPULINA NV	HOWELL	6/4/83	SUMMERS(NONE)	MO
1305	MELILOTUS OFFICINALE NV	ST.FRANCOIS	6/27/82	SUMMERS(NONE)	MO
1305	MELILOTUS OFFICINALIS NV	ST.FRANCOIS	6/26/83	SUMMERS(NONE)	MO
1306	MELILOTUS ALBUS NV	ST.FRANCOIS	6/27/82	SUMMERS(NONE)	MO
1308	LOTUS CORNICULATUS NV	JEFFERSON	6/27/82	SUMMERS(NONE)	MO
1308	LOTUS CORNICULATUS NV	LINCOLN	6/25/83	SUMMERS(NONE)	MO
1308	LOTUS CORNICULATUS NV	RALLS	6/25/83	SUMMERS&WALLACE(NONE)	MO
1308	LOTUS CORNICULATUS NV	MARION	6/25/83	SUMMERS&WALLACE(NONE)	MO
1308	LOTUS CORNICULATUS NV	JEFFERSON	6/26/83	SUMMERS(NONE)	MO
1326	ROBINIA PSEUDO-ACACIA NV	AUDRAIN	7/24/86	PELTON(NONE)	MO
1326	ROBINIA PSEUDO-ACACIA NV	CALLAWAY	7/8/86	PELTON(NONE)	MO
1326	ROBINIA PSEUDO-ACACIA NV	COOPER	7/22/86	PELTON(NONE)	MO
1326	ROBINIA PSEUDO-ACACIA NV	HOLT	1986	LANGFELDT&SCHMIDT(NONE)	MO
1326	ROBINIA PSEUDO-ACACIA NV	HOWARD	9/4/86	PELTON(NONE)	MO
1326	ROBINIA PSEUDO-ACACIA NV	SHELBY	1986	LONG(NONE)	MO
1335	CORONILLA VARIA NV	RALLS	6/25/83	SUMMERS&WALLACE(NONE)	MO
1356	LESPEDEZA VIOLACEA NV	GREENE	9/24/83	SUMMERS(NONE)	MO
1366	LESPEDEZA CUNEATA NV	GREENE	9/24/83	SUMMERS(NONE)	MO
1366	LESPEDEZA CUNEATA NV	TANEY	10/5/83	SUMMERS(NONE)	MO

1401	RHYNCHOSIA LATIFOLIA NV	OZARK	07/05/86	SUMMERS (1620)	MO
1410.99	OXALIS DILLENII NV	COLE	05/08/86	DELOZIER (1933)	MO
1410.99	OXALIS DILLENII NV	HICKORY	04/25/86	DELOZIER (1922)	MO
1411	OXALIS STRICTA NV	CARROLL	08/08/83	DELOZIER (1391)	MO
1413	GERANIUM CAROLINIANUM NV	HOWELL	5/17/84	SUMMERS(NONE)	MO
1413.99	GERANIUM CAROLINIANUM NV	HOWELL	6/4/83	SUMMERS(NONE)	MO
1415	GERANIUM PUSILLUM NV	GREENE	4/25/82	SUMMERS(NONE)	MO
1415	GERANIUM PUSILLUM NV	GREENE	6/6/82	SUMMERS(NONE)	SMS
1415	GERANIUM PUSILLUM NV	OZARK	6/4/83	SUMMERS(NONE)	MO
1418	TRIBULUS TERRESTRIS NV	LAFAYETTE	08/02/83	DELOZIER (1344)	MO
1418	TRIBULUS TERRESTRIS NV	GREENE	8/27/82	SUMMERS(NONE)	MO
1418	TRIBULUS TERRESTRIS NV	WARREN	10/10/82	SUMMERS(NONE)	MO
1442	TRAGIA CORDATA NV	DOUGLAS	05/15/85	SUMMERS (1516)	MO
1445.10	EUPHORBIA HETERPHYLLA V.GRAMINIFOLIA	OREGON	8/16/81	SUMMERS(NONE)	MO
1445.10	EUPHORBIA HETEROPHYLLA V.GRAMINIFOLIA	STONE	10/3/81	SUMMERS(NONE)	MO
1458	EUPHORBIA SUPINA NV	WARREN	10/10/82	SUMMERS(NONE)	MO
1459	EUPHORBIA HUMISTRATA NV	HOWELL	9/26/84	SUMMERS(NONE)	MO
1464	CALLITRICHE TERRESTRIS NV	HICKORY	04/25/86	DELOZIER (1924)	MO
1470.99	RHUS COPALLINA NV	RANDOLPH	6/10/86	PELTON(NONE)	MO
1477	EUONYMUS ATROPURPUREUS NV	HOWARD	9/4/86	PELTON(NONE)	MO
1482.99	ACER SACCHARUM NV	NODAWAY	1986	LANGFELDT&SCHMIDT(NONE)	MO
1486.99	ACER NEGUNDO NV	CLARK	1986	LONG(NONE)	MO
1487.99	AESCULUS GLABRA NV	MERCER	8/8/85	HERSHEY&MORGAN(NONE)	MO
1487.99	AESCULUS GLABRA NV	HOWELL	5/12/83	SUMMERS&WALLACE(NONE)	MO
1518	MALVA NEGLECTA NV	WEBSTER	6/6/82	SUMMERS(NONE)	MO
1530	ABUTILON THEOPHRASTI NV	STONE	11/07/86	SUMMERS (1650)	MO
1533	HIBISCUS MILITARIS NV	LAFAYETTE	08/02/83	DELOZIER (1345)	MO
1542.20	HYPERICUM MUTILUM V. PARVIFLORUM	PULASKI	09/15/85	SUMMERS (1553)	MO
1546	HYPERICUM GENTIANOIDES NV	LAWRENCE	10/04/85	SUMMERS (1575)	MO
1549	ELATINE TRIANDRA V.AMERICANA	DALLAS	6/6/82	SUMMERS(NONE)	MO

1550	BERGIA TEXANA NV	ST. CHARLES	08/17/86	SUMMERS (1631)	MO
1552	HELIANTHEMUM BICKNELLII NV	DALLAS	6/3/82	SUMMERS(NONE)	MO
1559	VIOLA PAPILIONACEA F.PAPILIONACEA	HOWELL	5/9/83	SUMMERS&WALLACE(NONE)	MO
1559	VIOLA PAPILIONACEA F.PAPILIONACEA	DOUGLAS	5/10/83	SUMMERS&WALLACE(NONE)	MO
1559.09	VIOLA PAPILIONACEA F.ALBA	HOWELL	5/12/83	SUMMERS&WALLACE(NONE)	MO
1561	VIOLA SORORIA F.SORORIA	HOWELL	5/9/83	SUMMERS&WALLACE(NONE)	MO
1582	AMMANNIA COCCINEA NV	HOWELL	10/19/86	SUMMERS (1647)	MO
1584	LYTHRUM ALATUM NV	BUCHANAN	06/06/86	DELOZIER (2035)	MO
1590	JUSSIAEA DECURRENS NV	SHANNON	10/18/86	SUMMERS (1646)	MO
1605.99	OENOTHERA LACINIATA NV	PHELPS	5/9/82	SUMMERS(NONE)	MO
1608	OENOTHERA LINIFOLIA NV	WEBSTER	6/6/82	SUMMERS(NONE)	SMS
1613	OENOTHERA KUNTHIANA NV	BUTLER	5/17/84	SUMMERS(NONE)	MO
1615	OENOTHERA TRILOBA NV	WASHINGTON	5/22/82	SUMMERS(NONE)	MO
1617.99	GAURA PARVIFLORA NV	GREENE	9/24/83	SUMMERS(NONE)	MO
1621	MYRIOPHYLLUM BRASILIENSE NV	OREGON	05/02/86	SUMMERS (1592)	MO
1624.20	PROSERPINACA PALUSTRIS V.AMBLYOGONA	SHELBY	(NODATE)	SUMMERS&WALLACE(NONE)	MO
1631	SANICULA GREGARIA NV	DOUGLAS	6/5/83	SUMMERS(NONE)	MO
1677	PASTINACA SATIVA NV	MONITEAU	05/08/86	DELOZIER (1931)	MO
1677	PASTINACA SATIVA NV	BUCHANAN	06/06/86	DELOZIER (2030)	MO
1677	PASTINACA SATIVE NV	MORGAN	05/08/86	DELOZIER (1930)	MO
1681.99	CORNUS FLORIDA NV	SHELBY	1986	LONG(NONE)	MO
1683	CORNUS DRUMMONDI NV	WORTH	1986	LANGFELDT&SCHMIDT(NONE)	MO
1689	MONOTROPA UNIFLORA NV	ST. FRANCOIS	09/29/85	SUMMERS (1569)	MO
1690	MONOTROPA HYPOPITHYS NV	DOUGLAS	9/29/81	SUMMERS(NONE)	MO
1698.40	DODECATHEON MEADIA V.BRACHYCARPUM-F.PALLIDUM	DOUGLAS	5/10/83	SUMMERS&WALLACE(NONE)	MO
1698.40	DODECATHEON MEADIA V.BRACHYCARPUM-F.PALLIDUM	HOWELL	5/12/83	SUMMERS&WALLACE(NONE)	MO
1700	LYSIMACHIA NUMMULARIA NV	DOUGLAS	7/18/82	SUMMERS(NONE)	MO
1713.99	ACER NEGUNDO NV	AUDRAIN	7/24/86	PELTON(NONE)	MO
1713.99	DIOSPYROS VIRGINIANA NV	SHELBY	1986	LONG(NONE)	MO
1717.99	FRAXINUS PENNSYLVANICA NV	CARROLL	8/7/85	HERSHEY&KUENNEN(NONE)	MO

1717.99	FRAXINUS PENNSYLVANICA NV	CHARITON	8/7/85	HERSHEY(NONE)	MO
1717.99	FRAXINUS PENNSYLVANICA NV	WARREN	1986	ROBINE(NONE)	MO
1734	GENTIAN ANDREWSII NV	DOUGLAS	9/29/81	SUMMERS(NONE)	MO
1745	VINCA MINOR NV	BOLLINGER	5/16/84	SUMMERS&WALLACE(NONE)	MO
1749.99	APOCYNUM CANNIBINUM NV	HOWARD	08/08/83	DELOZIER (1461)	MO
1754	ASCLEPIAS PURPURASCENS NV	HOWELL	6/1/81	SUMMERS(NONE)	MO
1765	ASCLEPIAS HIRTELLA NV	HOWELL	6/23/84	SUMMERS(NONE)	MO
1765	ASCLEPIAS HIRTELLA NV	ST.FRANCOIS	6/30/84	SUMMERS(NONE)	MO
1765	ASCLEPIAS HIRTELLA NV	HOWELL	7/21/84	SUMMERS(NONE)	MO
1775.99	IPOMOEA HEDERACEA NV	DADE	08/28/84	DELOZIER (1619)	MO
1775.99	IPOMOEA HEDERACEA NV	BUCHANAN	08/01/86	DELOZIER (2063)	MO
1778.10	IPOMOEA LACUNOSA F. LACUNOSA	DADE	08/28/84	DELOZIER (1620)	MO
1780.99	CONVOLVULUS SEPIUM NV	CHARITON	08/08/83	DELOZIER (1443)	MO
1780.99	CONVOLVULUS SEPIUM NV	MORGAN	07/27/85	DELOZIER (1733)	MO
1790	CUSCUTA CEPHALANTHI NV	OZARK	9/25/83	SUMMERS(NONE)	MO
1798	PHLOX GLABERRIMA V.INTERIOR	SHANNON	6/24/84	SUMMERS(NONE)	MO
1831.99	MYOSOTIS VIRGINICA NV	STONE	04/30/85	DELOZIER (1717)	MO
1840.10	VERBENA URTICIFOLIA NV	MORGAN	07/27/85	DELOZIER (1732)	MO
1847	LIPPIA LANCEOLATA NV	DOUGLAS	7/18/82	SUMMERS(NONE)	MO
1864	AGASTACHE NEPTOIDES NV	HOWELL	8/20/82	SUMMERS(NONE)	MO
1866	NEPETA CATARIA NV	DOUGLAS	10/26/82	DELOZIER (777)	MO
1869.99	PRUNELLA VULGARIS NV	ST.FRANCOIS	6/27/82	SUMMERS(NONE)	MO
1872	PHYSOSTEGIA FORMOSIOR NV	HOWELL	9/29/81	SUMMERS(NONE)	MO
1877.10	LAMIUM AMPLEXICAULE F. AMPLEXICAULE	ST. FRANCOIS	05/09/86	DELOZIER (1954)	MO
1877.10	LAMIUM AMPLEXICAULE F. AMPLEXICAULE	DENT	04/12/87	DELOZIER (2137)	MO
1878	LAMIUM PURPUREUM NV	HICKORY	04/25/86	DELOZIER (1921)	MO
1878	LAMIUM PURPUREUM NV	DADE	04/03/86	DELOZIER (1900)	MO
1878	LAMIUM PURPUREUM NV	DENT	04/12/87	DELOZIER (2138)	MO
1883	SALVIA AZUREA V.GRANDIFLORA	DOUGLAS	9/27/82	SUMMERS(NONE)	MO
1888.99	MONARDA FISTULOSA NV	HOWARD	08/08/83	DELOZIER (1459)	MO

1907	LYCOPUS VIRGINICUS NV	SHANNON	9/20/81	SUMMERS(NONE)	MO
1921	SOLANUM AMERICANUM NV	LAFAYETTE	08/02/83	DELOZIER (1356)	MO
1951.10	GRATIOLA NEGLECTA V. NEGLECTA	JOHNSON	05/04/84	DELOZIER (1539)	MO
1954.99	MIMULUS RINGENS NV	DOUGLAS	7/18/82	SUMMERS(NONE)	MO
1957	LINDERNIA ANAGALLIDEA NV	LAFAYETTE	08/02/83	DELOZIER (1351)	MO
1969	PENSTEMON TUBIFLORUS NV	JOHNSON	06/14/83	DELOZIER (1159)	MO
1973	COLLINSIA VERNA NV	ST. CLAIR	04/18/86	DELOZIER (1913)	MO
1973	COLLINSIA VERNA NV	LAWRENCE	04/27/85	DELOZIER (1675)	MO
1988	VERONICA ARVENSIS NV	PULASKI	04/12/87	DELOZIER (2140)	MO
1988	VERONICA ARVENSIS NV	STONE	04/29/85	DELOZIER (1701)	MO
1989	VERONICA POLITA NV	BUCHANAN	04/03/85	DELOZIER (1650)	MO
1989	VERONICA POLITA NV	CLINTON	04/03/85	DELOZIER (1648)	MO
1989	VERONICA POLITA NV	STONE	11/08/86	SUMMERS (1663)	MO
1989	VERONICA POLITA NV	WEBSTER	03/16/85	SUMMERS (1506)	MO
1989	VERONICA POLITA NV	WEBSTER	6/6/82	SUMMERS(NONE)	MO
1989	VERONICA POLITA F.ALBA	GREENE	4/19/84	SUMMERS(NONE)	MO
1994.99	GERARDIA FASICULATA NV	GREENE	9/24/83	SUMMERS(NONE)	MO
1996	GERARDIA SKINNERIANA NV	PULASKI	09/15/85	SUMMERS (1562)	MO
1997	GERARDIA GATTINGERI NV	ST. FRANCOIS	09/29/85	SUMMERS (1568)	MO
2012	CATALPA SPECIOSA NV	AUDRAIN	7/8/86	PELTON(NONE)	MO
2012	CATALPA SPECIOSA NV	COOPER	9/18/86	PELTON(NONE)	MO
2012	CATALPA SPECIOSA NV	HOWARD	6/10/86	PELTON(NONE)	MO
2012	CATALPA SPECIOSA NV	MONITEAU	7/22/86	PELTON(NONE)	MO
2015	OROBANCHE UNIFLORA NV	DOUGLAS	5/13/83	SUMMERS&WALLACE(NONE)	MO
2033.10	PLANTAGO VIRGINICA V. VIRGINICA	HICKORY	04/25/86	DELOZIER (1923)	MO
2037	SHERARDIA ARVENSIS NV	DOUGLAS	5/13/83	SUMMERS&WALLACE(NONE)	MO
2038	GALIUM VIRGATUM NV	WEBSTER	6/6/82	SUMMERS(NONE)	MO
2053.99	CEPHALANTHUS OCCIDENTALIS NV	RANDOLPH	7/30/86	CROUSE(NONE)	MO
2064.10	LONICERA JAPONICA V. JAPONICA	LAFAYETTE	06/28/83	DELOZIER (1275)	MO
2064.10	LONICERA JAPONICA V. JAPONICA	PETTIS	06/14/83	DELOZIER (1160A)	MO

2088.09	DIPSACUS LACINIATUS NV	PIKE	8/17/82	SUMMERS(NONE)	MO
2088.09	DIPSACUS LACINIATUS NV	SAINTLOUIS	9/9/82	SUMMERS(NONE)	MO
2088.09	DIPSACUS LACINIATUS NV	BOONE	8/1/83	SUMMERS(NONE)	MO
2107.99	LOBELIA SPICATA NV	PETTIS	06/14/83	DELOZIER (1168)	MO
2109.50	LOBELIA SYPHILITICA V. HYBRIDA	OREGON	09/14/86	SUMMERS (1636)	MO
2130.99	KUHNIA EUPATORIOIDES NV	ANDREW	09/15/82	DELOZIER (488)	MO
2134.20	LIATRIS ASPERA F. BENKEI	FRANKLIN	09/08/85	SUMMERS (1541)	MO
2142	GUTIERREZIA DRACUNCULOIDES NV	CHRISTIAN	10/5/83	SUMMERS(NONE)	MO
2143	GUTIERREZIA DRACUNCULOIDES NV	DOUGLAS	9/24/83	SUMMERS(NONE)	MO
2143	GITIERREZIA DRACUNCULOIDES NV	OZARK	9/24/83	SUMMERS(NONE)	MO
2151.99	SOLIDAGO SPECIOSA NV	HOWELL	9/27/84	SUMMERS(NONE)	MO
2167	SOLIDAGO LEPTOCEPHALA NV	HOWELL	09/13/86	SUMMERS (1635)	MO
2169.99	SOLIDAGO GRAMINIFOLIA NV	GREENE	9/23/80	SUMMERS(NONE)	MO
2169.99	SOLIDAGO GRAMINIFOLIA NV	CRAWFORD	10/7/83	SUMMERS(NONE)	MO
2169.99	SOLIDAGO GRAMINIFOLIA NV	HOWELL	9/26/84	SUMMERS(NONE)	MO
2176	ASTER FURCATUS NV	OZARK	9/25/83	SUMMERS(NONE)	MO
2180.99	ASTER SAGITTIFOLIUS NV	STONE	10/3/81	SUMMERS(NONE)	MO
2181.10	ASTER DRUMMONDII NV	ANDREW	09/15/82	DELOZIER (429)	MO
2184.10	ASTER NOVAE-ANGLIAE F. NOVAE-ANGLIAE	ANDREW	09/15/82	DELOZIER (486)	MO
2197	ASTER ONTARIONIS NV	ANDREW	09/15/82	DELOZIER (459)	MO
2198.10	ASTER PRAEALTUS V. PRAEALTUS	PLATTE	10/14/82	DELOZIER (723)	MO
2201	ASTER PTARMICOIDES NV	OZARK	9/24/83	SUMMERS(NONE)	MO
2207.99	ERIGERON ANNUUS NV	OZARK	6/4/83	SUMMERS(NONE)	MO
2208.99	ERIGERON STRIGOSUS NV	ST.FRANCOIS	6/26/83	SUMMERS(NONE)	MO
2209	ERIGERON TENUIS NV	HOWELL	05/16/85	SUMMERS (1518)	MO
2232	XANTHIUM PENSYLVANICUM NV	PULASKI	09/15/85	SUMMERS (1548)	MO
2250	HELIOPSIS HELIANTHOIDES V.SCABRA	DOUGLAS	7/18/82	SUMMERS(NONE)	MO
2250.99	HELIOPSIS HELIANTHOIDES NV	CARROLL	08/08/83	DELOZIER (1403)	MO
2268.99	HELIANTHUS ANNUUS NV	SALINE	08/08/82	DELOZIER (1464)	MO
2268.99	HELIANTHUS ANNUUS NV	CARROLL	08/08/83	DELOZIER (1364)	MO

2277.99	HELIANTHUS HIRSUTUS NV	STE.GENEVIEVE	9/13/80	SUMMERS(NONE)	MO
2286	VERBESINA HELIANTHOIDES NV	ST.FRANCOIS	6/27/82	SUMMERS(NONE)	MO
2291.09	COREOPSIS TINCTORIA F.ATROPURPUREA	HOWELL	7/18/82	SUMMERS(NONE)	MO
2291.99	COREOPSIS TINCTORIA NV	BARRY	8/26/82	SUMMERS(NONE)	MO
2293.20	COREOPSIS LANCEOLATA V. VILLOSA	STONE	04/29/85	DELOZIER (1693)	MO
2298.30	BIDENS CERNUA V. ELLIPTICA	PULASKI	09/15/85	SUMMERS (1559)	MO
2329	MATRICARIA MATRICARIOIDES NV	CRAWFORD	05/09/86	DELOZIER (1947)	MO
2329	MATRICARIA MATRICARIOIDES NV	STONE	04/29/85	DELOZIER (1708)	MO
2329	MATRICARIA MATRICARIOIDES NV	HICKORY	04/25/86	DELOZIER (1918)	MO
2329	MATRICARIA MATRICARIOIDES NV	MARIES	05/08/86	DELOZIER (1944)	MO
2329	MATRICARIA MATRICARIOIDES NV	WEBSTER	6/6/82	SUMMERS(NONE)	MO
2329	MATRICARIA MATRICARIOIDES NV	RALLS	6/25/83	SUMMERS&WALLACE(NONE)	MO
2329	MATRICARIA MATRICARIOIDES NV	GASCONADE	6/6/84	SUMMERS(NONE)	MO
2330.99	CHRYSANTHEMUM LEUCANTHEMUM NV	DOUGLAS	6/5/83	SUMMERS(NONE)	MO
2339	ARTEMISIA LUDOVICIANA V.MEXICANA	GREENE	9/24/83	SUMMERS(NONE)	MO
2339.99	ARTEMISIA LUDOVICIANA NV	ST.FRANCOIS	9/7/81	SUMMERS(NONE)	MO
2378	KRIGIA BIFLORA NV	HOWELL	6/4/83	SUMMERS(NONE)	MO
2382	TRAGOPOGON DUBIUS NV	GREENE	6/6/82	SUMMERS(NONE)	MO
2382	TRAGOPOGON DUBIUS NV	OZARK	6/4/83	SUMMERS(NONE)	MO
2382	TRAGOPOGON DUBIUS NV	TEXAS	6/5/83	SUMMERS(NONE)	MO
2385	TARAXACUM OFFICINALE NV	MONITEAU	04/27/86	SUMMERS (1584)	MO
2385	TARAXACUM OFFICINALE NV	WASHINGTON	05/09/86	DELOZIER (1951)	MO
2385	TARAXACUM OFFICINALE NV	STONE	8/23/82	SUMMERS(NONE)	MO
2385	TARAXACUM OFFICINALE NV	HOWELL	6/4/83	SUMMERS(NONE)	MO
2385	TARAXACUM OFFICINALE NV	DOUGLAS	6/5/83	SUMMERS(NONE)	MO
2389.99	LACTUCA SCARIOLA NV	HOWARD	08/08/83	DELOZIER (1462)	MO
2390	LACTUCA SALIGNA F.SALIGNA	PHELPS	9/25/84	SUMMERS(NONE)	MO
2391.99	LACTUCA CANADENSIS NV	CARROLL	08/08/83	DELOZIER (1383)	MO